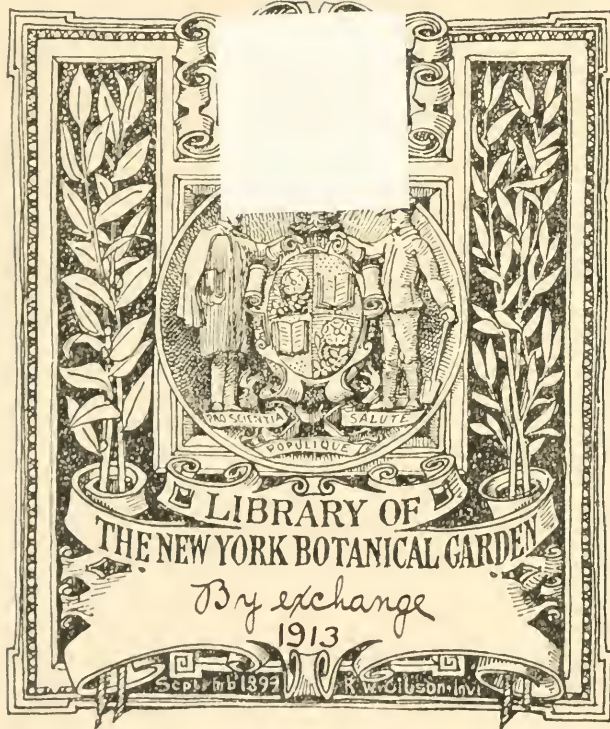




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IRISH GARDENING

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

VOL. VIII.

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Irish Gardening

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Roses under Glass.

By ERNEST BEWLEY, Danum, Rathgar, Co. Dublin.



THE Editor has asked me more than once to write something on growing Roses under glass. I am now doing so, in the hope that some other growers better qualified will give us some hints as to how they manage theirs. Here the Roses are grown in a light, airy span-roof house running north and south, having ventilators along both sides of the ridge the entire length, and along each side of the house. The roof is made of movable sashes, like garden-frame lights, which slide off easily. There are two rows of 4-inch pipes along each side and across the end, about three feet from the walls at the edge of the border nearest the stage, which is in the centre, with a walk along the sides and end. The roof, which had been taken off at the beginning of June, is replaced on the 1st November, and the Roses in pots are taken up from the bed where they had been plunged during the summer. The pots are carefully

washed and then brought into the house; all water is withheld, and the ventilators and door are left wide open, the object being to give all the plants as perfect a rest as possible, especially the Roses that are growing in the borders of the house, as the borders remain damp for some time, which often causes a little untimely root action; but I have never found any evil results follow this slight growth, which only lasts for a time. About the beginning of December we are careful to see that none of the shoots that are wanted on the pot plants (the border plants never get quite dry) show signs of shrivelling; should any be found, sufficient water and no more is given to cause them to plump up again. It does not matter if the unripe shoots slightly shrivel, as they will be cut away at pruning time. Pruning is completed just before Christmas Day, all unripe and dead wood being cut clean away, and the hard, well-ripened shoots cut hard back to a good plump, dormant eye looking outwards.

When a plant becomes old and hide-bound, we leave a strong growth, if it has flowered, that has come from the collar at the junction of the stock and the Rose, and cut most or all of the rest of the plant away; any old wood that is left is cut away next season, when there will be nothing left but young, strong, vigorous growths.

All the prunings are carefully collected and burned in the furnace, thus destroying the various pests that are harbouring in the tops of the shoots. On the afternoon of 26th December the house is closed, the next morning a gentle spraying is given, and the pot plants get a good watering, as they are very dry. About an hour afterwards the top ventilators are opened on the side opposite to the wind, according to the condition of the weather; a little heat is turned on if the weather is cold, but as we only want to begin with a day temperature of 45 to 50 or 55 degrees from sun heat, and 38 to 40 degrees, or very little more, at night, we are careful not to overdo it, remembering that in forcing all plants we have to copy the weather in which the plants will begin to grow in their ordinary season if left to themselves. Spring days are not very warm, and the nights are cold when the outdoor Roses begin to push their buds. Syringing every morning an hour before the ventilators are opened will keep the pots and borders damp enough at first, but when growth advances, with a higher temperature, water is given as it may be required, but care is taken not to over-water, which is easily done, especially the borders. All unnecessary shoots that have made their appearance are rubbed off before they grow more than half an inch long. If greenfly makes its appearance the house is fumigated at once. As the days lengthen and the sun's heat becomes more powerful, the ventilation is increased: we do not shade the Rose house now, as we find we get better blooms and hardier foliage by not doing so, also the chance of mildew is reduced. Should a spot or two of mildew be seen, a pinch of flowers of sulphur is taken between the finger and thumb and gently rubbed on the spot on the leaf above and below, which kills the pest. When the

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flower buds appear, feeding is commenced, liquid manure is given alternately with soot-water. Sometimes three or more flower buds come at the end of a shoot, only one is kept and the others removed, only taking one in a day. A sharp lookout is kept for the worm-in-the-bud: it is not difficult to find him neatly rolled up in a leaf at the end of a shoot, where if not caught and killed he will soon make his way to the precious flower bud and eat its heart out. As we prefer to bring the Roses on slowly, we do not get many blooms before the beginning of April, and even then the artificial temperature does not exceed 75 degrees by day and 50 degrees at night. It is quite possible to force Roses into bloom in twelve or thirteen weeks, but if it is done the blooms will be nothing like so sturdy and will not last nearly so long when cut. After the first blooming the plants are rested for a short time, and repotted before the second growth begins, using fresh, sweet loam, mixed with bone meal and manure. The roof is taken off the house early in June, allowing the plants in the borders to grow under ordinary conditions, which is most desirable: the pot plants are plunged just over the rim of the pots in a bed outside that is fully exposed to the sun and air, so that the wood may become thoroughly ripened for another year.

Arum Lilies (*Richardia africana*)

It will repay any one to grow these beautiful Lilies, their treatment is so simple. Assuming that the plants have been lifted and potted up in October, they should now (early December) have their pots full of roots. There is no reason

why there should not be an abundance of flowers by Christmas, which can be easily kept up until the end of May if a liberal supply of liquid manure be given: the drainings from a cowshed are very suitable, if collected and stored in a tank. Soot water will also be found beneficial. As the temperature rises to about 50 degrees in the morning, before the ventilators are opened, give the plants a good syringing when the weather conditions are suitable. The house should be kept closed from a half to three-quarters of an hour afterwards, so as to allow the plants to get the full advantage



Photo by]

ARUM LILIES.

[Drummond & Sons.

of the moisture in the air, through their foliage. Ventilation may be given at the top, taking advantage of all sunshine during the dull season: if the temperature of the house rises to 60 degrees or more it will do no harm, and as the days become warmer increase the ventilation and give more water. About the end of May, when the plants will have ceased to flower freely, they should be rested and hardened off, and stood outside in a sheltered position. About

the middle of June, turn the plants out of their pots, and plant them in single crowns, about a foot apart, in rows two and a half feet apart in a warm border that has been previously well dug and heavily manured. A top-dressing of well-decayed farmyard manure a couple of inches thick will help to keep them in a moist condition. Should the weather be hot and dry they will require to be well watered from time to time during the summer. Beyond this they require little else until the beginning of October, by which time the plants will have grown very strong and sturdy; they should then be lifted and potted up in a good rich mixture of fresh loam and old manure. Pots eight to ten inches in diameter are very suitable sizes, putting as many plants as possible in each pot; they can then stand in a sheltered position out of doors until the beginning of November, but should there be any appearance of frost, the plants must be brought under glass at once, as even two or three degrees of frost injures the foliage. If stood in a bright, airy house, they will continue growing, unless the weather is very cold, in which case a little heat should be turned on. From the 1st December

a nice growing atmosphere should be maintained, and as growth increases the syringe may be used freely. Should greenfly make its appearance, fumigate at once, as these pests are not admissible in a house where Lilies are grown.

In some places in Africa, where these Lilies grow wild, they are known as Pig Lilies, and it is an insult to offer one to a lady. They are at home in marshy ground, caused by the overflowing of the rivers in the rainy season, but in the dry season, when the water recedes and the sun is burning hot, they become baked in the mud, when pigs root them up and feed on them greedily.

It is not uncommon for Arum Lilies to be dried off in these countries, being put out of doors in their pots, and allowed to remain

without water during the summer. I have even seen the pots taken away, when they were required for other plants, leaving the balls of earth and roots exposed to the burning heat of the sun and drying winds, the result being poor growth and a few sickly flowers.—T. Y.

The Red-flowered Kabschia Saxifrages.

By M. HORNIBROOK, R.M., Knapton, Abbeylax.

So many important additions have been made to the red-flowering Saxifrages of this section that it has become worth while to group them

together in a new sub-section, and they are now recognised as the Engleria sub-section of the Kabschia Saxifrages—an imposing name no doubt, and one which requires a lot of "living up" to. However, the Englerias are such august people, and wear the purple with such grace, that they are worthy not only of an imposing name, but of the choicest situations in our rock gardens. They are mostly plants of great interest, quite distinct both in



Photo by]

SAXIFRAGA STRIBNRYI.

[R. A. Malby.

foliage and flower from the other sections, and, as far as I know them, perfectly easy to grow in Ireland if their requirements be satisfied. The best known is *S. Grisebachii*; it forms attractive rosettes—round in small plants and somewhat elongated in older—of most beautiful blue-grey leaves, and then, very early in the new year, up come the curious crimson flower stems with their red bracts, which are typical of the sub-section; no doubt the actual flowers are disappointingly small—one always expects from the early appearance of the flower stem that they will be larger; but the whole effect of the spike is so charming, I always imagine it to be a spike of pink Lily-of-the-Valley—that when one once gets used to it one forgets the size of the flowers and only remembers their charm.

Unless otherwise stated all the following have similar flower stems and bracts.

S. thessalica has attractive pale grey-blue foliage, very spiky and thorny, like a strong growing *S. burseriana*, its flower-stems and bracts are very similar to those of *S. Grisebachii*, but shorter; it is a good grower.

S. Frederici-Augusti has rosettes larger and rounder than these of *S. Grisebachii*, and its flower stems are densely covered with iridescent pink hairs: a most fascinating plant.

S. Stribnyi is very near *S. Frederici-Augusti*, but my experience of it leads me to agree with Mr. Reginald Farrer, that it is distinct. It is supposed to carry its flowers in a candelabrum-shaped head instead of, like *Frederici*, loosely down the stem; but I find one cannot always depend on this, as I have seen flower stems growing in each of these ways at the same time upon the same plant. I sent plants to Glasnevin and Tully—cuttings struck off the same plant, and the former's flower when I saw it was not very typical, but the latter's absolutely so; with me it is a stronger grower than *Frederici*.

S. media, or *calyciflora*, is a Pyrenean, and is one of the few representatives of Western Europe, nearly all the others hailing from the East. I have received two varieties under this name—one similar to *S. porophylla*, but a little larger, the other nearer to *S. Frederici-Augusti*, but with very large rosettes and spikes of flower. Mr. Farrer, who saw it in bloom last season, suggested it might possibly have a little mixed blood in it. Whatever it may be it is a notable plant, and surpasses in size all its relations.

S. porophylla.—I have not got a Kew list, and I am told that there is some uncertainty about this species; but certainly the plants I have are quite distinct from any others: the rosettes are very round, of medium size, and have a habit of growing like small leaning towers of Pisa; this is doubtless the result of their Italian blood, as my plants are said to have come from the Abruzzi.

The true *S. luteo-purpurea* comes from the Pyrenees and *S. luteo-viridis* from Transylvania: the former has yellow flowers in purple calyces, and the latter in yellow calyces; neither are particularly interesting, except to the collector, and the former is in addition a trap for the unwary, as some nurserymen send out for it a form of *S. sancta*. (I got it twice, and once, when I should have known better, I was entrapped into buying a "*Frederici-Augusti*" which turned out to be my old friend *S. apiculata*!)

S. Stuarti and *var. rosea* are near to *S. media*, but their rosettes are smaller and rounder, the former has yellow flower stems.

S. Bertoloni is halfway between *S. porophylla*

and *S. thessalica*. I see Mr. Farrer thinks it very close to the latter, but with me the rosettes, though somewhat similar, are much larger, and the leaves narrow, but quite flat, whereas the leaves of my *S. thessalica* are as thorny as *S. burseriana*. *S. Bertoloni* is one of the hardiest and best doers of the section. *S. Gusmusii*'s rosettes are not unlike those of *S. luteo-viridis*, but its flowers are of a light rose pink. I find this the most difficult of the group to keep, and with me it is inclined to die away unexpectedly. *S. Kellereri* I have just received, but have not seen it in flower; but Mr. Ball informs me that it flowers very early, bearing wide open pink flowers on red stems; it is a hybrid of *S. porophylla* and *S. burseriana*, and resembles the latter in growth, but has rosettes one and three-quarter inches across.

There are also *S. Clarkei* and *S. Schottii* (the latter I think the result of a cross between *S. luteo-viridis* and *S. Frederici-Augusti*), but I have not yet got them.

As to culture one would expect that the Easterners—inhabitants of Servia and the Balkans—would demand the hottest spot one could give them, but on the contrary with me, *S. media*—the Pyrenean—alone will stand full sun; all the others do best in spots where they get the sun at intervals. (I, alas! have trees near by.) I have one plant of *S. Stribnyi* in full sun on moraine, but I lost *S. Frederici-Augusti* and *S. Gusmusii* in the same spot, and my successes are all in positions open and sunny, but not torrid, very sharp drainage about 18 inches below them and planted in a mixture of loam, grit, a little leaf-mould, and any quantity of limestone chips, both incorporated with the soil and freely sprinkled on the surface. In such conditions they grow freely and remain in flower for a long period. An occasional top-dressing of chips and an occasional watering in very dry weather are all the attention they receive. I think it would be unsafe to plant them very low down. They certainly deserve a choice spot in the rock garden, and show to the best advantage when grouped together.



It certainly pays to only hand-pick weeds on small rockeries. One is always getting interesting seedlings. I came across last month on a dry rock-work a self-sown hybrid *Antirrhinum*—as far as I can see it is a natural hybrid between *A. glutinosum* and *A. siculum*; the latter is not hardy here, and I see the hybrid is wilting after the severe frost (22 degrees) that we had; however, I have a few rooted cuttings which I pray will not rot off. It is unlike *A. glutinosum*—a compact erect bush about 8 inches high, with leaves midway between the two parents, and the flowers cream with yellow lip, and distinct dark crimson splotch, a rather interesting plant.—MURRAY HORNIBROOK.

Notes on a Holiday Tour.

By JOHN H. CUMMING.

AT the beginning of last September it was my privilege to have a tour through various parts of Scotland, and garden notes then made may be interesting to some of your readers. As most of us know there are fashions in gardening, and in the course of my ramblings I was agreeably surprised to find that the old fashion of tender plants for summer bedding is rapidly giving place to hardy things. *Pelargoniums*, *Calceolarias*, and *Lobelias* that one used to see everlastingly are now in many places entirely absent in the summer display.

Visiting Lord Kinnaird's place in the fertile carse of Gowrie, I noted a border over a hundred yards long planted throughout with four lines of *Antirrhinums* and two lines of *East Lothian Stock*. The *Antirrhinums* were tall at the back, then of an intermediate height, and the front two lines were purple and white stocks. In the flower garden the beds were filled with *Pentstemons* of one colour; *Antirrhinums*, tall, medium and dwarf in distinct colours; *Larkspurs*, *Phloxes*, and *Marguerites*. Not a *Pelargonium* to be seen. I need hardly tell gardeners what a saving of labour this system of bedding means. Cuttings of all these, if desired, can be kept in frames all winter. I noticed in a few gardens the new *Pentstemon Southgate Gem*; it is a big improvement on *Newberry Gem*, and in a mass is really a capital thing. The use of annuals in pots to make a temporary display was effectively done at the Dundee Horticultural Exhibition. It is a three days' affair, held in tents in one of the public parks, and the executive spend £1,000 in prizes and amusements, and are well repaid by a large attendance. I was impressed by the use nurserymen made of the floor space at this show. Much tabling is dispensed with, and grand groups worked out on the floor. A really charming border was made up entirely of annuals in pots, and visitors saw the true value of annuals for such a purpose.

Here also I noted a new *Croton-leaved Coleus* that is a distinct break away from the well-known type. It has a slender upright habit, and with long, narrow, drooping lacinate leaves, highly coloured, and the whole plant has the appearance of a well-grown *Croton*. Those who have not yet tried *Sutton's Fairy Rose* from seed have a pleasure in store. I saw it in a nurseryman's stand at the Royal Caledonian Show in Edinburgh. It was in pots, and used as a ground work for *Standard Roses*. It grows a foot high, and is smothered in blossoms of a nice pink colour.

Dahlias have changed in character very much during the past twenty years. Lately the *Pæony-flowered* form created much interest, but a newer type still has come to the front. It is called the "Collarette," and very elegant it is. Messrs. Dobbie were the only nurserymen who were awarded a gold medal at the Edinburgh Show, and their stand was largely made up of a huge display of this class of *Dahlia*. As garden plants they are very decorative, while for cutting they are said to be superior to any other form of *Dahlias*, lasting quite one week in a cool room.

I had a run through the late General Wauchop's place at Niddrie, and there I saw a new departure in herbaceous border arrange-

ment. The borders were on each side of a central walk, but there were no edges to the walk—no stiff boxwood, stones or tile edging. The plants along the front were dwarf, and allowed to grow irregularly on to the walk. This gave quite a natural pleasing appearance, and I could not help thinking it a great improvement on the stiff, formal borders one so often sees.

Visitors to Edinburgh cannot help admiring its beautiful Princes Street. Its gardens, too, have a natural beauty seldom met with in cities. The summer bedding this year in a large portion of them is made up almost entirely of *Antirrhinums*. The lordly tall sort of three feet down to the dwarf and compact one of nine inches, in a great variety of colour, was indeed making a great effect, and viewed from a distance arrested the attention by the brilliancy of colouring produced.

At Duntreath Castle, in Stirlingshire, I noted several things worth remembering. The gardens' best display was expected to be in late summer and autumn. To provide for this, flower beds and borders were filled mostly with hardy plants. The herbaceous borders were simply grand in appearance. The mode of planting adopted is to group, say, six or eight plants of a kind together. This gives a bold mass of colour. The plants used are varieties of *Helianthus*, *Asters*, *Pentstemons*, *Phloxes*, *Montbretia*, *Gypsophila*, and such like. The staking of these is too often done by putting down one stake and encircling the plant with a string. In the borders under notice all the branches of each plant are supported by a stake, thus making each a group perfect in itself. These stakes are put in early, and are concealed by the later growth, and thousands of them are used. It entails much work, but when such a border is in flower the effect is really charming. A part of the grounds is devoted entirely to flowering shrubs and foliage of an ornamental nature. By the middle of September *Golden Elders* are reckoned past their best. Here they were looking fresh, and the deep golden colour was strikingly attractive. On enquiry I learned they were cut down to the ground early in May each year. This induces new growth, which keeps fresh, bright and dwarf later into the autumn than where they are usually pruned down earlier in the year. Outdoor *Chrysanthemums* were a feature in the bedding, and their dwarf appearance led me again to ask the plan of cultivation adopted. The cuttings are inserted in boxes during the first week in May; when struck they are planted out direct from the cutting box. In three months they are in full flower.

The planting of a big oval bed in a conspicuous place was considered specially good this year. Plants about five feet high of *Calceolaria amplexicaulis* were planted four feet apart. Underneath as a groundwork was *Perilla nankinensis*. The royal yellow heads of this grand *Calceolaria* were a wonderful contrast to the dark metallic foliage of the *Perilla*. Such combinations arrest attention, and can be done by even the simplest subjects.



THERE are three sorts of blacke Hellebor or Beares Foote, one that is the true and right kind, whose flowers have the most beautiful aspect, and the time of his flowering most rare, that is, in the deepe of winter about Xmas . . . We call it in English the true blacke Hellebor, or the Xmas flower.—*John Parkinson*.

Artificial Manures.

BY EDMUND TURNER, A.R.C.S.C.I.

WHEN the word manure was first used in print its meaning was very different to what it conveys to our minds to-day. Then it meant to work by the hand; though nearly all our garden operations with the soil are done by hand, yet we would not consider it manuring at the present day.

At what date a commencement was made to use certain materials, such as chalk, marl and sand, for the improvement of soils and the better growth of plants we do not know. The first record of it is found during the latter half of the sixteenth century. During the eighteenth century many organic materials were used. Some of these are still applied, and include soot, wood-ashes, horn shavings, hoofs and malt dust. In 1838 we heard of the application of an artificial fertiliser, nitrate of soda being the first, and it was followed in 1840 by sulphate of ammonia, and in 1842 superphosphate was being tried. The Stassfurt potash deposits were developed about 1860, and the fertilising properties of basic slag were discovered in 1879. During the past few years these have been followed by various processes to bring the atmospheric nitrogen into a combined form.

Although many of our artificial manures have been in the market for many years, yet how few of our gardeners use them! They usually, if they do need any concentrated fertiliser, use some form of guano, or else a manure merchant's mixture. It is by no means uncommon to find some of them sold at three to five times their market value, and few are sold at or near their market value, even after an allowance has been made for any incidental expenses.

It is impossible to lay down any definite rule for applying artificial manures: for to say that any mixture, or series of mixtures, will suit all soils has been proved to be incorrect, as manure which may give good returns on one soil may not influence the same crop to any extent on a slightly different soil.

To know definitely what fertilizers to use, and in what proportions they require to be applied, to get the best results, it is necessary to carry out some simple experiments with each crop, using different proportions of the fertilisers. Only a general rule can be given, which each grower will have to vary more or less to suit his own conditions; for instance, in the case of vegetables, it has been found that for most crops, fifteen tons farmyard manure, four cwt. superphosphate, one cwt. sulphate of potash and one cwt. nitrate of soda per acre, give the best returns on some soils, yet on clay soils the sulphate of potash can be left out with most crops and the return is equally good.

Of the elements necessary for plant growth, in ordinary practice 3, or at the most 4, are all that need be applied to get the most out of our garden soils. If one of these is absent, or not present in excess of what is needed by the plant, no excess of one or more of the others can take its place, and it is the case with which these fertilisers can supply the necessary element in cases of shortage in which lies their chief value. The shortage may not be due to the absence of the required constituent. It may be so combined chemically with the other constituents of the soil that the plant cannot obtain it, and may, therefore, starve. The fertilisers are, on the other hand, readily available for the use of the plant.

Some are undoubtedly quicker than others, and, in the majority of cases, it is the quickest acting ones which are the most useful to the gardener in helping him to get the best results in the shortest possible time.

Of the fertilisers applied, the nitrogenous ones are the most liable to be lost by drainage. They should only be applied when growth is rapid, or well started; never should they be applied as the crop is finishing its growth for the season. They reduce the plant's power of resistance to disease and increase the production of foliage; hence their beneficial effect on such crops as cabbage, celery, and asparagus.

The most important in this group are nitrate of soda (NaNO_3), and sulphate of ammonia $[(\text{NH}_4)_2\text{SO}_4]$.

Nitrate of soda, or "Chili Saltpetre," is found in Chili in beds known as caliche, where it is mixed with gravel and other impurities. Before it is exported it is purified by crystallisation, and then contains 15.5 per cent. nitrogen. It is extremely soluble and diffusible, and readily available to plants; should be applied as a top-dressing, and then not allowed to remain in contact with the foliage, else it will scorch it. Its action can be seen in the course of three or four days on growing plants, by their showing a deeper green colour. It has one serious drawback, especially on heavy or clayey soils, when regularly applied, for it deloculates the soil—i.e., the little aggregates of very fine particles which cause the clay to crumble down when dry, to allow the water to drain through it, are immediately resolved into their finest state of division, and hence the tilth is injured. An application of lime makes matters worse. The best course to pursue is either to apply it in equal proportions with sulphate of ammonia or apply them alternately.

This salt is deliquescent, and should, therefore, be stored in a dry place, where it cannot absorb moisture from the atmosphere.

The soda base of this fertiliser is also valuable; not that it is in any way necessary for plant nutrition, but the soluble soda salt reacts with the clay in the soil, and thus brings a little of the potash contained there into solution, and therefore often dispenses with the necessity of a potash dressing.

AMMONIUM SULPHATE is a bye-product of the gas works, and is soluble in water. It contains twenty per cent. of nitrogen, but it is slower in its action than the nitrate of soda, and is not so easily washed out of the soil and into the drains. It tends to increase the acidity of the soil, and, where it is used, a fair dressing of lime will be needed; but the lime should not be mixed with it or applied at the same time, else there will be a loss of nitrogen in the form of a gas. It is generally applied before the seeds are sown, if of a quick germinating species, or before the crop is put out. Sometimes it is used as a top-dressing the same as the nitrate of soda.

PHOSPHATIC FERTILISERS.—These tend to increase the production of wood and flowers. Their action is not seen by the sudden increase in the growth of a plant. They stimulate the ripening process of plants. All these fertilisers can be applied before the crop is sown or planted, as they are never washed out of the soil into the drainage.

BASIC SLAG.—Tetracalcic phosphate ($\text{Ca}_4\text{P}_2\text{O}_8$) is one of the most useful phosphatic fertilisers for the gardener. It contains a small amount of free lime, and thus often saves a direct application. It is a bye-product in the manufacture of pig-iron into steel, and usually contains thirty to forty-

per cent. of phosphate of lime; slowly soluble in water, and the finer it is ground the more readily it goes into solution. In an average sample, at least eighty per cent. of it should pass through the standard sieve. This should be applied at the rate of five or six cwt. per acre early in the winter, and is found to be suitable to all soils, except those which have plenty of lime. Its action is best seen on peaty or clayey soils.

SUPERPHOSPHATE.—This fertiliser is derived from tricalcic phosphate ($\text{Ca}_3\text{P}_2\text{O}_8$), by using enough sulphuric acid (H_2SO_4) to liberate about two-thirds of the phosphorus, the greater part being thus changed into monocalcic phosphate ($\text{CaH}_2\text{P}_2\text{O}_8$) which is readily soluble in water; but there is also some tricalcic phosphate left in the material, and as this is not nearly as soluble in water it is not so valuable as a fertiliser. A good sample should be dry and finely ground. If let get damp, or stored in a damp place, it rapidly deteriorates. It is often used as a top-dressing at the rate of three to four cwt. per acre in the spring, and can also be applied and worked into the soil before the crop is put out. It is the most successful phosphatic fertiliser for light soils, but should not be applied to acid or boggy types of soil. The amount of phosphorus present varies from twenty-six to thirty-six per cent. tricalcic phosphate rendered soluble. It should hardly be necessary to say that, taking the price and freightage per ton into account, the better grade is, without exception, the cheapest.

BONES.—These are largely used in gardens in some form or other, but generally either in quarter inch pieces or as bone meal. They contain fifty to sixty per cent. of insoluble tricalcic phosphate, and also a small percentage of nitrogen, but their value seems to be over-estimated, and the price is consequently high. Steamed bone flour is better value for its price.

POTASSIUM FERTILISERS.—These help to produce a short sturdy growth, and increase the plant's power of resistance to disease. They rarely, if ever, need be applied to clay soils. All that is required of them is an agent to liberate the stores of potash locked up in the soil. When the supply of potash is short in the soil water, the manufacture of carbohydrates in the plant is greatly hindered, and it is found that crops, rich in carbohydrates (sugar, starch, &c.), are those which are most dependent on a full supply of potash. They have one serious drawback in that, when constantly applied to some soils, they may deflocculate it. This is probably the result of a chemical action in the soil between the potassium salt which has been added and the calcium carbonate (CaCO_3) present there.

POTASSIUM SULPHATE (K_2SO_4) is the best for the garden, a crystalline salt, and readily soluble in water. It is purified before being exported, and contains forty-nine to fifty-two per cent potash (K_2O). It can be applied as a top-dressing, or, where possible, worked into the soil in the winter or spring.

POTASSIUM CHLORIDE.—Muriate of potash (KCl) contains forty-six to fifty-seven per cent. potash. It should be applied during the winter, and, if ever used as a top-dressing, should not be let come in contact with the plant.

KAINIT.—This is not nearly so concentrated a fertiliser as the previous two, as it contains only twelve per cent. potash, the remainder being made up of common salt (NaCl) and other salts, and should be applied early in the winter, at the rate of four to six cwt. per acre.

Single Chrysanthemums.

By JOHN WHYTOCK, Crawfordsburn Gardens.

ALTHOUGH the first Chrysanthemum species introduced into this country from China about the year 1789 was a single variety (*C. indicum*), it is only within the past eight or ten years that growers have recognised the value of them for decorative purposes, and taken to grow them in any quantity. But now every year sees them coming more and more to the front until it would seem as if they were going to oust the Japanese or large flower altogether. Trade specialists also are introducing new and improved varieties every year, and we have only to look at the meetings held in connection with the National Chrysanthemum Society to see that whereas only one variety or two at the most of the Japanese type that are introduced get an award, a great many varieties of the singles introduced are taken notice of and given awards.

The reason of this is the single lends itself so well for all kinds of decorative purposes, and is so graceful either in sprays or disbudded, whereas the Japanese or large flower is very stiff, and is of little or no value as a decorative plant unless for grouping in a large show-house or conservatory. Then again, to develop the large flower properly, the plants from the cutting to the flowering stage require very close attention, entailing a great deal of expense, time and work, and in the end producing at the most two or three flowers in a nine or ten-inch pot. Whereas with the single, by stopping the plants about twice in the growing season, you get a bushy plant with from a dozen to fifteen flowers fit for any sort of decoration either for cutting or as a pot plant. So that one can hardly wonder at owners of gardens instructing their gardeners nowadays to grow less of the big bloom and go in more for the single.

We grow about 500 plants here, all singles, and the treatment they get is:—Cuttings are taken from December to January, generally in two batches—the first batch about the first week in December, and the second as soon as the first lot are able to be shifted out of the cutting frame; in so doing we extend the flowering season a month or more. We take as sturdy cuttings as we can get; some varieties are inclined to throw weak cuttings, but by placing the old stools in some light and airy place they will become more sturdy in a week or so. Some varieties also are very slow in throwing suckers, and in the case of these, if the surface soil is scratched and a top-dressing of good soil in which is mixed some chemical manure is given them, and they are placed in a light position in a warm house, in a week or so they will start to throw up cuttings.

As soon as the cuttings are made the heads of them are dipped in a bucket of insecticide wash (I find "Abol" the best); this helps to kill any insect such as thrip or greenfly that may be on the cutting, and also acts as a preventive for rust. They are then inserted around the side, three in a three-inch pot, which has been previously filled with a compost of equal parts loam, leaf soil and sand, given a slight watering and placed on ashes in a frame which has been temporarily erected in a cool house. They are kept fairly close until rooted, after which air is gradually given until they can be shifted to some airy place on a shelf or near the glass. When

well rooted they should be potted up singly into three-inch pots if varieties are scarce; if plentiful, as a rule we pot the three plants on into a four or five-inch pot: in this way, when the flowering season comes, we can afford to take a smaller number of flowers from each plant, and yet have a well furnished specimen with twelve to fifteen flowers, and we get better flower. The compost used at this potting is three parts loam, one part leaf soil, sand and lime rubbish, to each barrow load of soil is added a seven-inch pot of bone meal and Thomson's plant manure mixed at the rate of two of bone meal to one of Thomson's. The pots should be well cleaned and crocked to allow the water to pass quickly through, for if the plants get in any way waterlogged the soil becomes soured, and the plant gets a check from which it never gets over. Pot firmly, but do not ram. After potting the plants are placed near the glass in a cool house until such time as they get a good start, when they are shifted to a cool frame outside. Care should be taken that frost does not get at them, and they should be covered up every night. About the first week in April they are gone over, and most of the varieties are stopped, and in about a fortnight's time, when they have started to break, they are potted into six or seven-inch pots in the same compost as the previous potting. They are then put back in the frame and kept close for a day or two until they start to grow, when air is gradually given until the lights can be taken off altogether in the daytime.

Two or three shoots having been allowed to come away from the first stop about the end of May, they will have to be gone over again and stopped, allowing two or three shoots to come away again. In a fortnight's time they are then ready for their final shift.

The compost used for this potting is rather heavier, it being four parts loam, one of sand, leaf soil, horse droppings if they can be got, and lime rubbish if procurable: if lime rubbish cannot be got, a good substitute is a five-inch pot of hot lime to the barrow load of soil, and the same quantity of artificial manure as in the previous potting. The pots should be well crocked for this potting, as they have to stand the weather outside all summer, and if it is a wet season if they are not well crocked the plants will soon get waterlogged. The plants should be firmly potted, but not over-rammed, and should not be filled higher than within three inches of the rim, so as to allow a top-dressing to be given them about the middle or end of August, of good fibrous loam, sand with some artificial manure mixed through it; the plants by this time being well rooted require some stimulant to keep them growing.

As soon as the plants start to grow after the final potting they should be staked, about four Bamboo canes to a pot, and laced with raffia to prevent the shoots getting broken with the wind.

From the beginning to the middle of September the plants will be showing buds, when they should be gone over and disbudded, allowing one or more buds to each shoot, according to the variety, this giving a well furnished plant. About the first week in October the plants should be housed, as if left out after this date they are liable to be damaged with early frosts. Before housing them they should be gone over and given a good spraying on the under side of the leaf with a solution of lime and sulphur, about a wineglassful to the three-gallon can of water. This acts as

a preventive for mildew and rust, which the plants are liable to get when housed. After they are housed they should be given, at regular intervals until they begin to show colour, a fumigating with "N.L." fumigant; this helps to kill and keep down thrip and greenfly. Plenty of air should be given the plants until they start to show colour, when airing must be more carefully done, and at this stage a little artificial heat should be turned on the house at night, and if the weather is wet and dull in the daytime, to dry up any dampness that may be in the house. They will not require so much watering now, so that the watering pot should be used judiciously so as to keep the flowers fresh as long as possible.

The above notes on the cultivation are for general purposes. Of course, if blooms are required for exhibition, more care and attention is required, as in the case of the Japanese flower. Late varieties will have to be pinched earlier than earlier varieties: then again some varieties give the best and most refined flowers on certain buds, and this has to be taken into consideration, and it is only by careful watching and attention that this can be attained.

The following are some of the best varieties either for cutting or exhibition purposes in their different colours:—

<i>Whites.</i>	<i>Pink.</i>
Mensa.	Edith Pagram.
Robert Thorpe.	Park's Seeding.
Florence Robinson.	Florrie King.
Purity.	Miss May Thorne.
Mrs. H. Herbert.	Metta.
Snowflake.	Caledonia.
<i>Yellow.</i>	<i>Crimson.</i>
Josephine.	Felix.
Celia.	Sandown Radiance.
Mrs. F. C. Hunter.	Mrs. W. Lee.
Mrs. T. Fox.	J. B. Lowe.
J. Gresswolde Williams.	Merstham Jewel.
<i>Bronze.</i>	
Bronze Pagram.	
Crown Jewel Improved	
Gerlie Whiteman.	



HARDY WINTER FLOWERS IN DECEMBER.

Those who like to have a bit of white heather for Xmas should grow a few plants of the White German Heath (*Erica carnea alba*): it usually opens its flowers before the new year, and some weeks in advance of the pink form. The brightest of all the winter flowers is the common Jessamine, while the sweetest one is the Winter Sweet (*Chimonanthus fragrans*): to give the maximum amount of flowers, the latter requires a sunny wall, not because the shrub is tender, but to ensure the shoots being well ripened.

There are two Winter Honeysuckles known as *Lonicera fragrantissima* and *L. Standishii*, the former has rounded leaves, and is half evergreen, and is often recommended, but *L. Standishii* is far more free in flowering; both are very fragrant. *Garrya elliptica* is an evergreen, useful as a bush or for covering a wall: its long ornamental catkins were just at their best for Xmas although they are usually later.

The best of the Witch Hazels is *Hamamelis mollis*, but all of them are bright and curious.

Vanda cærulea.

By ERNEST BEWLEY, Danum, Rathgar,
Co. Dublin.

VANDA CÆRULEA stands supreme among the Vandas, not alone for colour, but also for its wealth of bloom; more than a score of flowers have been obtained on a single raceme. The accompanying photograph is of a specimen grown here, and although it only carried ten flowers, it was an object of much admiration. The flowers are large, about four inches across, of a beautiful pale lavender-blue, prettily tessellated with a darker shade.

V. cærulea does not require as much heat as other Vandas, but does well in an intermediate temperature, or even cooler; it likes plenty of air, and it should only be shaded from the hottest sunshine. Abundance of water must be given during the growing season, but withheld almost entirely when at rest. It thrives best in a teak basket, where its roots are not confined.

Primulas.

By W. H. GREENE.

THESE are among the most useful of winter flowering plants; at this time of year their handsome trusses of delicately-tinted flowers in the midst of rich green foliage make them very attractive in the greenhouse mixed with other suitable plants. Few greenhouse annuals have improved to the extent of the *Primula* of late years, especially the *sinensis* type, of which we have such a variety of delightful colours. The *Stellata* also has claimed considerable attention. Too much cannot be said with regard to the usefulness of this plant: it forms a striking feature with its pyramids of starlike flowers, often rising 18 inches above the foliage. For house decoration it is most valuable, lasting such a long time in bloom.

All of this section require similar cultural treatment, which is not difficult to give. Seed should be sown early in May to obtain good strong plants by the autumn. Prepare clean, well-drained seed pans, fill to an inch of the top

with a nice light compost, consisting of fine loam and leaf-mould equal parts, with plenty of sharp sand added. Cover the seeds lightly with soil passed through a fine sieve, water with a fine rose-can, then place the pans in a warm moist temperature and cover them with a sheet of glass, guarding against drought at all times. When the seedlings appear well above the soil remove the glass and place the pans near the roof glass

in the shade to keep the little seedlings from becoming weak and drawn. After they have made a few rough leaves they should be potted singly into small pots in a similar mixture of potting material. Keep them in a growing temperature shaded from the sun till they have obtained possession of the new soil; by this time a cold frame situated in a partly shaded position will suit them. Ventilate freely, also keep a close watch for greenfly, to which they are very susceptible; fumigating every few weeks will keep this in check. As growth advances they should receive attention with regard to potting. Pots 5 inches in diameter are quite large enough for the first-named section to flower in; a size larger should be given the *P. stellata*, as this is a much stronger grower. The soil for the final potting should consist of good mellow fibrous loam and leaf-mould, the latter passed through a quarter inch sieve, in equal parts, with a good quantity of sharp sand well mixed.

When potting care must be taken not to have the plants too low in the pots, as this often tends to damping off. On the approach of autumn the plants should be transferred to the greenhouse, where they are intended to bloom.

During the flowering period a little Clay's

Fertilizer carefully pricked into the soil will greatly assist them.



Lone Flower, hemmed in with snows and white as they,

But hardier far, once more I see thee bend
Thy forehead, as if fearful to offend.

Like an unbidden guest . . .

Chaste Snowdrop, venturesome harbinger of spring,
And pensive monitor of fleeting years.—Hordsworth.

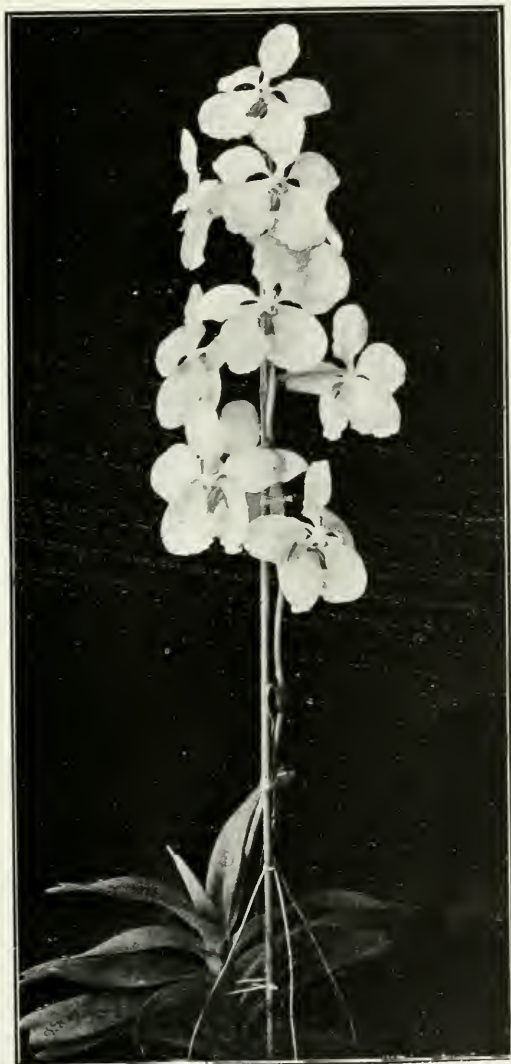


Photo by]

VANDA CÆRULEA.

[Ernest Bewley

Birch Trees.

By J. W. BESANT.

ALTHOUGH at present not highly rated in forestry, there are few deciduous trees more beautiful and useful for ornamental planting.

The winter aspect of the Birches is not the least of their charms, especially in those endowed with silvery bark. In habit, too, the various species of *Betula* have considerable claims on the planter on the look out for light and graceful effects. Seldom assuming the heavy branching habit of the larger forest trees, they are particularly appropriate in confined spaces where other trees would be out of place. Also, with few exceptions, the Birches are extremely hardy, and flourish in the most exposed positions in soil of indifferent quality. Some American species rejoice in a richer soil than generally falls to the lot of our native kinds, and these may be used to very good purpose on the banks of streams and by the margins of ponds and lakes.

Betula alba, formerly known as the Common Birch, is now divided into two sub-species—viz., *B. pubescens* and *B. verrucosa*. The former, now called the common Birch, is distinguished by the presence of short downy hairs on the young branches, while the latter, called the Silver Birch, is furnished on the young branches with tiny wart-like glands. Both have characteristic silvery bark, and never fail to excite interest, being especially noticeable in winter.

In addition to the two type forms there are several varieties of each worthy of inclusion. Of these *B. verrucosa pendula* and *B. verrucosa pendula Youngi*, two very beautiful weeping forms, are conspicuous. *B. pubescens urticifolia*, the cut-leaved Birch, is also valued for ornamental planting. There is also a fastigate form, and one with bronzy or so-called purple leaves.

Betula Ermani, found in Manchuria, Japan, &c., gives promise of making a useful species for ornamental work. There are not many large specimens known in cultivation at present, but young trees are distinct, the leaves being much larger than those of the common forms of *B. alba*.

B. humilis, a shrubby species of the Northern Hemisphere, does not exceed 7 or 8 feet in height, and is not of much ornamental value. It might, however, be usefully planted in bare exposed positions or on the margins of plantations.

Betula lenta, the Cherry Birch of North America, is not common in cultivation. The leaves are fairly large, ovate with toothed margins. In America this species is of considerable importance, producing good timber, which is imported into Britain in large quantities. It has been suggested as suitable for trial under forest conditions in the United Kingdom. One of the distinguishing characters of *B. lenta* is the aromatic fragrance of the branches and leaves.

B. lutea, the Yellow Birch of North America, with large ovate toothed leaves, is a good ornamental species worthy of more attention. The wood is yellow, and is imported for use in the manufacture of various articles of commerce. It is described in "The Trees of Great Britain and Ireland" as one of the largest broad-leaved trees in the eastern provinces of Canada and New England.

B. Maximowiczii, a Japanese species, is one of the best for ornamental planting. The leaves are the largest of any of the Birches, and the tree is a fast grower. There is a very fine tree of this

species in Mr. Walpole's garden at Mount Usher, Co. Wicklow.

B. nana, a dwarf shrub found wild in Scotland and the Western Hemisphere generally, is useful for rockwork and marginal planting. It is of dense twiggy habit, bearing small roundish leaves.

B. nigra, called the Red Birch in the States, is distinguished by its reddish-brown bark, which peels off in flakes. The leaves are fairly large and coarsely toothed, having a greyish colour underneath. In America it affects chiefly the banks of streams where it occurs, and may be recommended for like positions in this country.

B. papyrifera, the Paper Birch of North America, was introduced in 1750. In winter this is one of the most beautiful trees in the Arboretum. The smooth white bark of the main stem at once arrests attention, and is a source of much interest to visitors. The habit of the tree differs from that of our common species in that the lateral branches are stouter and more rigid, though the general outline is quite attractive. It is also known as the Canoe Birch, for the North American Indians used to make their canoes from its bark, and it also provided them with waterproof tent covering, &c.

B. pumila is another dwarf species hailing from North America, and may be recommended for the same uses as *B. nana*.

B. ulmifolia, from Japan, is a striking species, in which the whitish colour of the bark on the main stem extends even to the smaller subsidiary branches, giving the whole tree the appearance of having been white-washed.

B. utilis, of which there are good specimens in Trinity College gardens, is a native of the Himalayas. The specimen in the Arboretum at Glasnevin is still young, but is growing well, and promises to make a good tree. The bark is brownish, the leaves being more or less oval and toothed. Several other species are in cultivation at Glasnevin, including *B. globispica* and *B. Medwediewi*, neither of which have grown satisfactorily, perhaps because they are usually received as grafted plants.

Others, like *B. carulea Blanchardi* and *B. alnoides var. pyrifolia*, are not sufficiently known to warrant conclusions as to their merits for arboriculture. The latter, however, gives promise of being a useful tree.

B. raddeana has small, toothed leaves and pubescent branches and is stated, in the "Supplement to Nicholson's Dictionary of Gardening," to have been introduced from the Caucasus in 1887.

Hints to Amateurs.

By R. M. POLLOCK.

SUCH outdoor work as recommended for November and December, if not already done, may be carried out and should be finished. All transplanting, alterations in grounds, making or altering paths, putting up poles for roses, pergolas and arches may all be done, also the cutting down or lopping of trees. The pruning of fruit trees and the spraying of same should be completed as soon as possible, and everything left clean and tidy. Such wall Roses as *Gloire de Dijon*, *Safrano*, *Rêve D'Or*, *Climbing Mrs. W. J. Grant*, &c., may have their shoots shortened back, to induce them to keep furnished at the base, and to prevent them having all their flowers high up

on the wall. Ramblers such as Dorothy Perkins, Dorothy Dennison, White Dorothy, Crimson Rambler, Blush Rambler, and many more of the same section, will only require to have the old wood removed, and the long new shoots carefully tied in. In most cases it will be found that for the first two or three years after planting these Ramblers, practically no pruning of any sort need be done, and then only the old shoots should be removed.

Flowering shrubs may also be pruned, but before starting on this work the grower should ascertain on which wood of the plant the flowers are borne. Such shrubs as *Spiræa japonica* and its many varieties, *Coluteas* (Bladder Senna), *Sambucus* (Elders) and *Veronicas*, where they require to be reduced, are among some of the ordinary flowering shrubs which should be cut back at this time of the year, because they flower on the growth which they will make in the spring. Such shrubs as *Brooms* (*Genista* and *Cytisus*), *Lilacs*, *Forsythias*, *Almonds*, *Cherries*, *Pyrus*, *Flowering Currants* (*Ribes*), *Philadelphus* (Mock Orange), *Deutzias*, *Kerria japonica*, *Spiræa arguta*, *Berberis* (Barberry) and *Cotoneasters*, &c., should not be touched at this time of year. If any pruning is necessary this must be done in the spring, or after they have flowered. This, of course, is not a full list of all the many and beautiful flowering shrubs there are, but it may serve as a guide to those who are learning.

Any vacant ground may be dug over and left in the rough for use later on. Where necessary, lawns may be repaired, and an occasional rolling and sweeping will be beneficial and remove worm casts. Where worms are troublesome in grass, especially on tennis and croquet lawns, they can be removed by using a mixture supplied by Messrs. Birk & Co., 1 Fenchurch Avenue, London, E.C. This was successfully used on the courts of one of the Dublin Tennis Clubs, without the slightest injury to the sod, but the proportions and the mixing directions must be carefully followed.

Frost may come at any moment, and then all outdoor work will be at a stand still, therefore the sooner these operations are completed the better. After a heavy fall of snow the weight lying on the branches of trees will often cause them to break, and it is a good plan to go round any choice trees or shrubs with a long pole and shake off the snow. A piece of glass securely propped up on four pegs, slightly sloped in one direction, will keep wet and damp from lodging in the heart of any tender Alpine plant.

Violets in frames should be gone over periodically, and all decaying leaves removed. A light forking is also beneficial. Give plenty of air on mild days, but cover well at night in case of frost. Unless the weather is exceptionally dry no water need be given.

GREENHOUSE.—*Chrysanthemum* cuttings may still be taken, but by the end of the month all cuttings should be secured. Watch the rooting plants well for damp, and water carefully.

Gladiolus Colvillii the Bride, is an excellent subject for pot work, and may be potted up now. Also *Lilium auratum* and *L. longiflorum*. When well grown, these make beautiful pot plants for indoors. The first batch of Paper White *Narcissus* should be coming into flower, and the most forward of the others might be brought into the house. Arum Lilies in pots will benefit by occasional waterings with weak manure water.

Keep the leaves, and also the flowers as they appear, clean and free from green fly. If the pure white flowers get marked with fly or damp while still in the bud, they remain marked and thus lose much of their beauty.

Look over the seed lists and mark what seeds will be required. The sooner the order is sent in the better.

For small gardens the packets of seed priced at 1s., 6d. and 3d. are too large, and entail a lot of wasted seed. There is in Ireland no seed merchant who quotes in his seed catalogue 1d. packets of seed. Some of them will supply a small packet if asked to, but why do they not quote for these in their general seed catalogues.

An early batch of *Antirrhinum* seeds may be sown now for early flowering. Look over cuttings in boxes and pots and keep them as dry as possible.

The Winter Pruning of Orchard Trees.

By JAMES SCRIMGEOUR.

To the inexperienced the subject of pruning appears at once difficult and complex, as there seem to be so many authorities on the subject, each putting forth his own methods.

Pruning is the removal of any part of a tree—either root, stem, or branch—for a definite object, which includes—(1) the training and formation of the tree; (2) the admission of sunlight; (3) the production of wood and flower buds to ensure the greatest quantity of fruit on a limited space.

Here the pruner should not forget that a tree is a living plant, capable of playing as many tricks as an energetic schoolboy, and should the tree not respond to his intelligence he must accept this as a challenge from nature.

The initial training of fruit trees need not be described here, as they can be had from reliable nurserymen in various forms, such as Standards, Half-standards, Bush, Pyramid, Espaliers, Cordons, &c.

A great deal of controversy obtained as to whether trees should or should not be pruned in spring immediately after planting. The fallacy that they should not is fast dying out, and pruning is now almost invariably performed after planting, and rightly so, as thereby no time is lost. Starting then with a two-year old tree with well developed root, stem and branch, the winter pruning consists in the removal of a portion of the branches.

As it is the production of wood that is required at this stage to lay the foundation of the future tree, the branches must be cut tolerably close back to within six or eight inches of the base, according to the strength of the shoot or branch, it being advisable to have plenty of young shoots to form a good head. It will afterwards be much easier to cut a branch out than to replace one. When cutting back it should be remembered that it is necessary to cut to a bud facing the direction in which the branch is intended to grow. The cut should be about a quarter of an inch above the bud so as not to impoverish it, and each branch should be similarly treated, the result being observed during the season.

In August it will be seen that the branches have extended in length—these summer growths are technically known as the *extension*; side shoot or laterals will also have formed, and a few

flower buds on the previous year's growth may be also visible. The tree will in fact appear to the uninitiated as a rather tangled mass.

The next winter the pruner will have other complications to deal with, as fruit buds, lateral and extension now exist, the lateral growing upwards, inwards and crossing. These are cut back to at least four buds from the base, or to about two and a half inches. If any branches are too close rubbing each other one must be removed. Extension shoots are again pruned back to an outward bud facing the direction the branch is intended to take, thus completing the second year's pruning.

Similar results will follow next summer, flower buds, laterals and extensions developing, and in turn needing to be pruned back as already described, and the process repeated annually.

Flower buds are easily distinguished, inasmuch as they are round, plump and short, while the wood buds are long, thin, flat, and lie close to the branch.

It is a mistake to cut laterals too hard back, as by doing so more wood is produced. It is much better to err on the safe side, leaving four or five buds, and these form fruit spurs, which can be simplified or modified when the sap is directed towards the growing point of the branch. There are exceptions to this rule in some varieties which do not respond exactly as the pruner desires, and a slight change of tactics is required, yet the principle remains. Certain varieties with a weeping-willow habit make it advisable, when shortening the extension, to select upward facing buds to encourage upward growth. Other varieties have a tendency to fruit always on the tips of the young wood, and here the object must be the production of short twiggy growths. Different varieties have their peculiarities, and the grower must learn something of these and prune accordingly.

The above applies to all the forms of trees mentioned. The most important point is the even distribution of the branches around the tree and the spacing of them so as to allow free access between each branch in order that a man may not break off fruitful buds. If the space becomes too large, it is easy to lay in a young shoot, forming a secondary branch to the main one. On the other hand, in trees that are getting older, overcrowding and shading may become apparent. Here it is easy to remove a branch in such a position by the aid of a saw, care being taken to paint over the wound.

Standard, Bush, and Pyramids of PEARS and PLUMS respond freely in the early stages to the same form of pruning, and all that is required in winter is the cutting out of crossing upright laterals and the shortening of all laterals.

GOOSEBERRIES are formed and pruned in the same way, but it is much easier to prune them, as they fruit on the young as well as on the old wood. Therefore, as an old branch can be cut out and a young one laid in to take its place, a greater number of branches may be allowed, and they may be closer in the gooseberry. If sufficient room is allowed to permit of the hand passing up and down without scratching the bush will be thin enough.

RED CURRANTS, like apples, bear on the old wood, and the pruning is exactly similar in principle; the laterals and extensions are cut closer in, the centre being kept open to admit sunlight.

BLACK CURRANTS fruit freely on the one year old wood, and the treatment here consists in cutting the young tree back severely to get as much growth as possible from the base of the tree, and thereby to establish a succession of young wood annually by removing the old close to the ground. Thus the tree is constantly kept supplied with young wood for the production of fruit.

RASPBERRIES are very easily pruned, having annual shoots. Immediately the fruit is picked pruning should begin by cutting out the one-year old canes that have borne a crop. Again in winter all weak canes and surplus shoots ought to be cut out, leaving the line or clump moderately thin to admit sunlight and air. The points of the remaining ones are shortened back to the desired height.

Working of the Soil.

By ANDREW F. PEARSON, F.R.H.S., Lota Lodge, Glanmire, Co. Cork.

THE deep working of the soil is of such importance as an aid to the production of high-class garden produce that a short article on the subject at this season may be of some value to readers of IRISH GARDENING.

We are used to seeing the soil worked so badly in the general run of gardens that the wonder is how plants grow at all. I am aware that the common plea, "want of labour," has a lot to do with the matter, and many large gardens suffer on that account. I would therefore advise in such cases a systematic routine of piecemeal trenching, taking a square or half square one year, another the next, and so on until the whole garden has been deeply worked, certainly not less than 30 inches deep, and preferably deeper. I practice trenching up to 1 foot deep, and have never had reason to regret the bringing up of the crudest subsoil to the surface, there to leave it to the elements in their fair and their foul attitudes to deal with and make it fit for the production of high class fruits, flowers and vegetables. Doubtless, there are subsoils which can only be dealt with profitably by bringing gradually to the top. Bastard trenching in such a case is the correct thing. In my experience, however, of over a quarter of a century, gained from my apprentice days, on the stiff soil of the "Kingdom of Pife" to the plains of Sylhet, and noting in my travels similar work in the South African veldt, I cannot recall one instance of failure by bold treatment of the subsoil. I may say, however, I know of such failures, but they are the exception, and being so unusual I have no hesitation in recommending the practice of bringing up the subsoil for the disintegrating forces of the sun, rain, wind, frost and snow to tame into useful soil.

Besides the advantage of having a greater bulk of useful soil, you obtain a better drained, therefore a warmer and earlier, soil for the growth of plants. In extremely dry summers the benefits are of the most marked kind. Plants luxuriate by sending their roots deep down into the rich and cooling store, when vegetation actually ceases to live on shallow soils. Then in wet, sunless summers the deeply trenched soil remains dry and warm, whereas the shallow soil becomes

a wet mass resting on an impervious pan, through which neither moisture can penetrate nor can plant draw any good therefrom, and the advantages of summer are just as great in winter.

The novice at trenching may be annoyed to find after trenching, 3 feet deep say, that in two years' time the soil has become a 2-feet one only, or even less in depth. This is due to a natural shrinkage, and he must just keep working deeper.

The best time for trenching is the dead season of the year, say from October to March. The work is carried out with more effect then. But I work deep in the middle of summer if time and weather permits, and I hope to find time always for such work, believing that when shallow

Cytisus supranubius.

THIS uncommon Broom is a native of Teneriffe, and coming from there one would scarcely expect it to be thoroughly hardy. Five or six years ago it was planted in the open ground in the Glasnevin Botanical Gardens, and has never received any protection: during this time it has passed safely through severe winters when we have had 22 degrees or more of frost. The shrub is a quick grower, and has formed a bush 8 feet high by about the same through, growing in ordinary garden soil.

Mr. Smith, of Newry, says it is about 7 feet high with him, and is growing in an elevated part



[Photo'phyl]

CYTISUS SUPRANUBIUS.

[C. F. B.]

cultivation takes the place of deep I cease to grow high-class produce; yes, even profitable stuff.

I have not mentioned manure, which, of course, must be incorporated with the soil when trenching. The best for the purpose is undoubtedly the general farmyard manure, and in my opinion is best placed in layers under the first and second spits, the tendency of nutritive particles is to sink, so the position here indicated is the best. Both light sandy soils and heavy clay soils are benefited by ordinary farmyard manure. The cleaning of the gardens, such as weeds and leaves, dying vegetation of all sorts in fact, should be placed in reserve heaps in the rubbish yard and used over again when rotten, while hard wood and prunings should be reduced to ashes in a smother heap and used for fruits, &c., in spring: in fact all that the garden grows can be used over again in trenches.

of the nursery in shallow, poor soil on the top of rotten granite.

Cytisus supranubius resembles *Spartium junceum* in its leafless winter state, but the branches are stronger, and a lighter green in colour. In a seedling stage, and when making free growth in summer, the shoots bear tiny trifoliate leaves, whereas the *Spartium* bears simple leaves, but in neither case are they borne very freely.

This *Cytisus* has also been known to botanists under the name of *Spartium nubigenum*, and *Cytisus fragrans*, it is one of the most fragrant of all the *Cytisus* family, the creamy-white flowers having an almond fragrance.

Last year it flowered with unusual freedom, and was a most attractive shrub, and in the autumn a fair crop of seed was produced. The pods are small, about three-quarters of an inch long, and usually contain only one seed. Up to the present cuttings have been a failure, but seeds

germinate freely, and this is the best method of propagation.

Like the *Spartium* and other almost leafless shrubs this *Cytisus* breathes and transpires through the numerous pores or stoma found in the epidermis or skin of the younger branches.

As this shrub comes from a warmer climate than ours, some protection in winter may be needed when it is planted in the colder counties.

C. F. B.

The Cricket-Bat Willow.

A PAPER published in the *New Bulletin*, 1907, p. 311, dealt with the identity of the forms of *Salix* whose timbers are most prized by cricket-bat makers. It was there shown that the best of all willows for bat-making is a pyramidal-growing, female form of the blue willow (*Salix alba* var. *caerulea*), which, except for recent plantings, is only found in a few East Anglian counties. There was one interesting and important question which, for want of data, could not then be decided, this was whether restriction of the best cricket-bat willow to these eastern counties was due to its being a local variety, or perhaps hybrid, possessing by inheritance those peculiar qualities the cricket-bat maker desires; or, whether those qualities were due to, and dependent on, local conditions of climate or soil. As is well known the East Anglian climate is the driest and sunniest in the United Kingdom, and it was by no means certain in the opinion of several competent observers that the timber of the cricket-bat willow would retain its peculiar value if it were produced, say, in the warm, humid climate of Cornwall or in the somewhat similar conditions of the west of Scotland. Large numbers of cricket-bat willows have been planted during the past five years, and it has become important to ascertain how far the labour and expense incurred in such districts is likely to be recompensed.

Through the kindness of Mr. J. Arthur Campbell we are able to give an encouraging report on some timber of cricket-bat willow grown on his estate at Arduaine, Lochgilphead, Argyllshire. Mr. Campbell, for experimental purposes, made a plantation there of about 150 trees in 1903 and 1904. One of these, planted in 1904, having attained a diameter in its trunk of 6 to 7 inches, he cut down and sent to Mr. D. J. Carter, willow dealer, of Newtown, Waltham Cross, Herts, to ascertain its suitability and value for bat-making. Mr. Carter reported that it was perfectly satisfactory, and if of proper size for cricket-bat making (18 inches in circumference) would have fetched the normal price per cubic foot. This timber, having been grown under a rainfall of about 60 inches per annum as compared with that of East Anglia, which is under 25 inches, appears to afford sufficient proof that its peculiar virtues are inherent and not necessarily dependent on its environment.

It need hardly be said that cutting down trees of the size of the one noted above is wasteful. So much greater is the proportion of woody tissue deposited on the trunk as the tree increases in size that, even allowing for compound interest, a loss is incurred by felling trees before they are $1\frac{1}{2}$ to 2 feet in diameter of trunk.

Mr. Campbell believes that manuring the roots will prove profitable.—W. J. B., in the *New Bulletin*.

The Month's Work.

The Flower Garden.

By JOHN WHYTECK, Gardener to Colonel Crawford, Crawfordsburn, Co. Down.

THE flower garden presents at this time of the year rather a cold and dismal appearance, very few plants or shrubs flowering out of doors at this season, perhaps the most notable being *Jasminum nudiflorum*, with its golden-yellow flowers, and the Winter Sweet, with its delightful fragrance.

The present winter, as far as it has gone, has been very mild and open, so that outdoor work in general should be well forward, excepting, perhaps, in districts where the soil is heavy and retentive. Owing to the unusual heavy rainfall, outdoor operations may have been stopped, so that when weather and soil permit any alterations that are still to be carried out should be pushed on as quickly as possible.

HERBACEOUS BORDERS.—If not already done, any renovating or making of new borders should be seen to at once. If any of the old clumps have got too big and growth in the centre is weak, they should be lifted and the stronger or outside pieces broken off and replanted in clumps of three pieces to the clump. After any planting that is required has been done, the borders should receive a good mulching of well-rotted

manure, or if procurable manure from a spent mushroom bed, which should be forked deeply into the border, taking care not to destroy the roots too much.

ROCK AND ALPINE PLANTS.—These should be gone over, and those that require it given a top-dressing of compost, according as the plants require, as most Alpine plants are surface-rooting, and the top-dressing, as well as being beneficial to the plant, prevents the frost from getting at the roots. Some of the more tender species, such as the *Androsace* family, if exposed to too much wet, should be covered with sheets of glass, so as to prevent the heads from damping, and such subjects as *Gunneras*, *Romneya Coulteri*, and *Eremurus* should be protected with bracken or other light covering to keep frost out.

TREES AND SHRUBS. The planting of all deciduous trees and shrubs should be carried out as soon as possible, also any pruning that is required, and the shrubberies gone over and given a good forking. If there is plenty of garden refuse, it could be spread over the borders and forked in, and would be beneficial to the shrubs.

ROSES.—Any new plantations still to be carried out should be done at once. If the soil where they are to be planted is heavy and retentive, and fresh loam cannot be procured, the bed or border should be deeply trenched and some lumps of unslacked lime laid in the bottom of the trench. This helps to loosen and warm the soil; a good coating of well-rotted manure should be trenched



in, as Roses are strong feeders. After planting they should be given a good mulch to prevent frost from penetrating to the roots. Also any that require it should be given a stake to prevent them being blown about with the wind. Climbing Roses, such as the *Wichuriana* and *Polyantha* type, if not already done, should have all weak and old wood cut out and the new growth tied in. The *Crimson Rambler* is an exception in this; this is better left till the end of March, as the growth of this variety is liable to get blackened with frost and cold winds, and the old wood acts as a sort of protection.

LAWNS.—Any re-turfing that is necessary should be done, and they should be kept clean and swept and given an occasional rolling; this helps to keep down worm-casts. Tennis and croquet courts should be gone over, and any weeds in them should be eradicated.

CLIMBERS on walls and trellis should be gone over and pruned, thinned and tied in as the case may require. Clematis of the *Jackmanni* type require pruning hard back, as they flower on the current season's growths: the growths of those of the *lanuginosa* and *montana* type should only be thinned, as it is on the previous year's growth these varieties generally flower. All climbers should be given a good mulch of rotten manure.

At this time of the year, when the seedsmen's catalogues are coming to hand, a careful scrutiny of the flower seeds that are required for summer display will have to be made and ordered as soon as possible, as some subjects, such as *Altirrhinums* and *East Lothian* stocks, require to be sown as early in the year as possible so as to make a display not too late in the season. These should be sown in heat, and when they have made their second leaf could be pricked off into frames. Other bedding plants that have been wintered in frames should be gone over and any dampness that there is removed, and the frames in suitable weather should be given plenty of air, so as to keep the plants as sturdy as possible. If a clump or two of *Phlox* be lifted and put in a little heat, they will soon throw suckers which root easy, and they will make good plants for either massing or as dots plants for summer display.

The Fruit Garden.

By D. McINTOSH, Gardener to Alderman Bewley, Danum, Rathgar.

VINERIES.—Early Vines, which were started in November, will now be in flower. At this stage of growth a night temperature of 65°, with a day temperature of 75°, must be maintained, rising to 90° by sun heat. A little air should be admitted from the top about 8 o'clock in the morning and the same at the front, an hour later, but only sufficient to create a nice warm current of air throughout the house. To assist fertilization of the flowers, draw a soft feather brush once or twice up and down the bunches, when the inside conditions are dry and airy. The young shoots should be tied down to the wires just as the flowers begin to open. They are then not so liable to be broken off as when tied earlier. Mid-season Vines may be started this month. Close up the house and commence with a night temperature of 45° to 50°. Examine the borders,

and if dry give a fairly good soaking of clear water. Attend to the syringing of the rods and damping down of the borders in the morning and afternoon. This will promote a genial growing atmosphere and bring about a gradual bursting of the buds. Rub off all weak shoots, which are not wanted, as soon as they are formed, leaving only the two strongest to grow at each spur. One of these can be removed when it is seen which has produced the best bunch.

PEACHES AND NECTARINES.—Indoor trees should now have the full attention of the cultivator. Cut out all bare and useless branches, retaining only those with well-ripened wood and plump buds. Thoroughly cleanse the glass and woodwork of the house with a solution of soft soap and water. If the trees have been affected with red-spider or any other insect pest, wash every individual branch with Gishurst compound, using at the rate of eight ounces to the gallon of water. Great care is essential in the washing of the trees that the buds be gently dealt with, as they are so easily knocked off.

FRUIT TREES IN POTS.—Where pot trees are wintered outside, the pots are best situated in a sheltered position, partly plunged in ashes, and covered with some frost-proof material. From time to time, but particularly after a spell of wet weather, remove the covering material on a fine airy day, so that the soil in the pots may dry up a little. Re-cover the pots at once should a re-appearance of frost set in.

PEARS ON WALLS.—Summer pinching of the shoots reduces the work of winter pruning very considerably. This operation is also a means of producing plenty of fruit buds. Where pear trees on walls are allowed to form too many spurs, the flowers come weak and never produce fruits of good quality. The spurs may be thinned now, but the best time for this operation is undoubtedly the autumn, when they may be cut back and thinned with great advantage. After pruning is finished, dress the trees with an insecticide. Pear scale and many other insects can be completely eradicated at this season without injuring the wood or fruit buds. Remove an inch of the surface soil and replace the deficiency with a layer of good rich soil, mixed with a small amount of wood ashes or burnt earth. Vigorous growing varieties should receive no extra feeding properties until it is seen if they produce a good set.

STANDARD AND BUSH APPLES.—The pruning of these trees should be hastened without delay. If the main branches seem too crowded, thin out the weakest, and also any branches that are crossing each other. Whether standard or bush, the great aim should be to keep the centre of the tree open, so that sun and air can reach the fruits. Once a tree has formed a well-balanced head, very little pruning will be necessary to keep it in proper condition. Collect all prunings and rubbish and have them burned.

The Vegetable Garden.

By J. G. TONER, County Instructor in Horticulture, Co. Monaghan.

BRUSSELS SPROUTS.—This esteemed vegetable is most acceptable on all tables right through the season, and as a long period is required for its

growth and proper development, seeds may be sown under glass in mild heat during the first month of the year. Shallow boxes filled with any light rich soil will suit, and care must be taken not to be too liberal in regard to quantity of seed put in: The garden seeds supplied by our leading Irish firms may be depended on to give a high percentage of germination, therefore sow thinly so that stout, strong plants may result. After the young plants show, the lightest and most airy position should be accorded them, for it must be remembered that they are quite hardy, and the adoption of this early sowing is intended primarily to lengthen the time of their growth, and not to afford an opportunity of forcing them unduly and weakening their constitution.

PEAS.—Rarely does one hear of objection being made to a dish of good green peas: peas, indeed, may be regarded as the most popular vegetable product of our gardens. If only a fraction of the work and care that is given by gardeners of all classes to the culture of sweet peas were devoted to the vegetable form, what an improvement in crop and quality would result! A general practice in the way of forwarding the early crop is to sow in pots or on thin sods, grass side downward, and transplant these bodily later on to the open ground when conditions seem to be favourable. It works out well enough. Often, however, the plants are much too close, owing to the restricted space for sowing. These, like the sweet peas, do not, however, seem to receive any check worth mentioning when separated at planting time, and certainly grow away in a robust manner. If this method is adopted the seeds may be sown in boxes, and when singled out carefully at the planting time, allowing a few inches between each plant, the most satisfactory results are attained. With the very dwarf sorts, that are most favoured for early work, such splendid kinds as Gradus and The Pilot might with great advantage be included: a greater weight of produce will be given and succession assured.

ONIONS.—Apart altogether from the exhibitor's point of view, everyone should know that far and away finer crops are produced by early sowing under glass in January than waiting for suitable conditions in March to begin in the open ground. Ailsa Craig is the variety most favoured, being mild in flavour and growing to a large size. Much trouble will be saved later on if one is patient enough to dibble in the seeds, say, an inch apart in the boxes or pans when sowing. The roots of young onions are exceedingly brittle, and consequently much damage is done when singling them out for further transplanting. A little heat, of course, is desirable, but a little goes a long way, for they are easily weakened. Good plants can be had too even where artificial heat is not at command from this early sowing: growth naturally will be slower, but the plants proportionally stout.

MUSTARD AND CRESS.—Those excellent salads may be sown at intervals of a fortnight. It is not necessary, nor even desirable, to use soil. Pieces of thick felt, or even cloth, kept constantly moist, will bring on the growth to the right stage for cutting, and the annoyance of gritty matter will be absent.

TOMATOES.—It hardly pays to try in our dark winter days to endeavour to bring autumn-sown

tomato plants through that period. It is not a question of heat but of light: but just now seeds, sufficient to produce enough plants for a very early crop, may be got in. They too should be spaced as in the case of the onions. Rather more, however, might be allowed, as only a limited number will be required.

POTATOES.—In pots on shelves near the glass or on mild hotbeds these may, with a little care and judgment, be easily forced. Their value lies more in their novelty than in their nutritious qualities. They are in some cases expected however. Weber's Early is a grand little kind for this work. It does not grow large, nor is it a big cropper, but it is exceedingly white and early.

CAULIFLOWERS.—A small sowing of the forcing kinds made now will in all likelihood form a succession to the latest broccoli. These are, it must be pointed out, rather tricky kinds to deal with. Unremitting care is required, for they are comparatively delicate and highly bred, and if they once receive a serious check in their growth, "buttoning," as the premature production of the flower is called, takes place and all is lost. Water is sparingly used too, as they are very liable to damping off—that is, the stems turn black and the plants die. Crowded plants always suffer in this way.

A Practical Demonstration of Pruning and Spraying.

TIPPERARY, especially the district round Clonmel, has always been celebrated for its orchards and for the quality of the apples grown in these orchards. Cider making is an old established industry, and excellent cider is still made by the farmers. There is an orchard attached to all the farms in the apple-growing districts, some of these old orchards being of considerable extent, from one to ten acres. Unfortunately they have not received the care and attention which they deserve. The trees are mostly old, and they have not been pruned: the heads have become dense and crowded, and the stems and branches are thickly coated with moss and lichen, a condition which renders it impossible for them to produce remunerative crops of apples.

The Department of Agriculture has endeavoured to draw attention to these matters by giving practical demonstrations of the proper treatment of old fruit trees. On 17th and 18th December Sir Frederick Moore, Mr. W. S. Irving, and Mr. Rutherford, the County Council Instructor in Horticulture, attended at 10.30 a.m., and practically pruned and then sprayed two old apple trees in each of two orchards, describing the various operations as the work proceeded. Advertisements had been previously put in the local papers and posters displayed notifying that this work would be done, and inviting farmers to be present. The orchards selected were beside the public road, so that the effects of the treatment could afterwards be noted by passers by. About twenty-five farmers attended each of these demonstrations, and took a keen and intelligent interest in all that was done. They were encouraged to ask questions freely, and so many points were cleared up.

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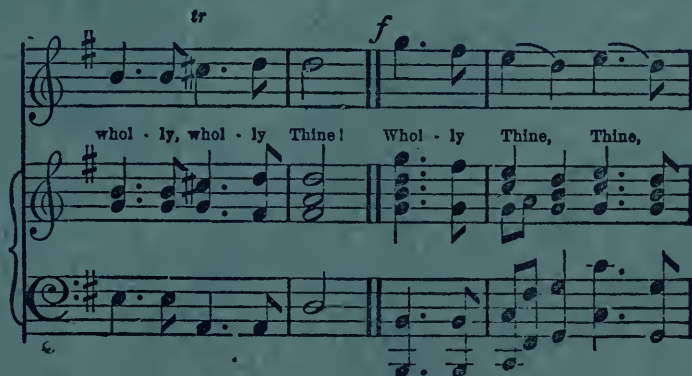
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Irish Gardening

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Department of Agriculture and Technical Instruction for Ireland.

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ARBORICULTURE IN IRELAND

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1913

EDITED BY C. F. BALL

Some Californian Irises.

By W. R. DYKES, M.A., Charterhouse, Godalming.

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BETWEEN the Pacific coast and the Rocky Mountains there is found a well-marked group of Irises to which the name Californian may be not inconveniently applied. Its members are perhaps better suited to the climatic conditions of Ireland than those of any other division of the genus, for even in England the foliage of several of the species remains green throughout the winter, unless the frosts are exceptionally severe. Moreover, the slender wiry rhizomes do not seem to demand that baking by the sun in summer which is almost essential to the well-being of those species, whose rhizomes are large and fleshy.

The reason why the Irises that form this group seem to be comparatively little known lies in the fact that they do not lend themselves easily to transplantation. The slender rhizomes send out few root-fibres and the plants are therefore slow to establish themselves in new quarters.

In addition to the paucity of the root-fibres another difficulty lies in the shortness of the period during which they are formed. If the plants are torn up in autumn, root-growth will be found to have entirely ceased, and the plants, making no attempt to establish themselves, invariably perish. It is only while leaf-growth is active, between March and early September, that transplantation has any chance of being successful.

Fortunately all the species set seed readily, and young plants when put out into the open ground in summer soon grow to flowering size. The soil should be light and relatively rich in humus, but care must be taken that it is free from any considerable proportion of lime.

With regard to the species that form the group it is possible to recognise two sub-divisions,

of which the best known examples are *I. longipetala* and *I. Douglasiana*. Of these the former is only found along the Californian coast in the region of winter rain and heavy sea mists in summer. The stems rise to the height of two to three feet, and usually bear only one head of flowers, from which, however, emerge in succession as many as four or five blooms. The large falls are conspicuously veined with deep purple on a white ground, while the oblong standards are of a uniform pale blue purple colour. They are of a curious and characteristic shape, having a square, blunt upper end with a wide and deep indentation at the centre. The foliage is of a deep green, somewhat stiff and nearly as long as the stems. Moreover, the plants begin to grow in the autumn, sending up their new growths before the old leaves have withered entirely away. Accordingly they are practically evergreen.

Differing from *I. longipetala*, chiefly in its habit of growth, there is a closely allied species that occurs further inland, and which behaves as a mountain species by losing its foliage entirely in the autumn and lying dormant until the spring. The leaves never attain the length of those of *I. longipetala*, and are always considerably shorter than the stem. The flowers, however, except for being somewhat more slender, are indistinguishable from those of that species. This is the plant to which Nuttall gave the name of *I. missouriensis*, and it is necessary to distinguish it carefully both from *I. longipetala*, of which it is apparently only a sub-species, and from another plant to which Nuttall gave the name of *I. montana*, although it is uncertain whether he ever actually published any description of the plant. Fortunately his original specimens both of *I. missouriensis* and *I. montana* are still preserved in the British Museum, and there seems little room for doubt as to their identity. *I. montana* differs from the two species already described by its lanceolate and not truncated standards, and by the fact

MAR 27 1913

that the colouring of the falls is more uniform and less conspicuously veined. Moreover, the flowers bear a distinct yellow patch on the blade of the falls. This plant is sometimes to be obtained from nurserymen under the name of *I. Tolmieana* or *missouriensis*, while the true *missouriensis* has been in cultivation as *I. longipetala* var. *montana*.

The other group, of which *I. Douglasiana* is the most vigorous and the best known, contains a number of beautiful species well suited for cultivation in large rock gardens in warm aspects and rich, light soil. *I. Douglasiana* gives rise to innumerable colour varieties, when it is raised from seed, which is by no means a difficult process, for the plants set seed abundantly, probably as the result of self-fertilisation and the seeds germinate as readily. The colour varies from a pale buff-yellow through pale mauve to deep violet-purple. The flower stems are numerous, and strong plants produce spathes each containing three flowers, so that the display lasts for a considerable time. The foliage is striking, being at its best in late autumn, and then gradually dying off a bright red colour by the time the new growths push up in March. This *Iris* only grows near the Pacific coast of California.

Further to the north, in Oregon, is found another beautiful and very floriferous species. *I. tenax*, which has probably suffered from a suggestion that was once made that it should be cultivated in half shade in moist soil. These conditions do not suit it at all, for it requires a warm, light soil and some sunshine. Then in June the foliage is literally hidden by the flowers, varying in shade from a pale, pearly grey to the deepest claret purple. Unfortunately, it is my experience that after two or three such lavish displays the plants tend to exhaust themselves. Since, however, seed is usually abundant, it is an easy matter to raise fresh batches of seedlings from time to time. Probably, too, a little care in removing dead flowers and so preventing the formation of seed would tend to prolong the life of the plants.

I. bracteata and *I. Purdyi* are an interesting pair of species. Both are, unfortunately, rare, since they object most strongly to any disturbance once the plants have reached maturity. In typical specimens of both species the flowers are yellow veined with crimson purple. The deep green foliage is very scanty and tough, and the chief difference between the two is that in *I. bracteata* the perianth tube is quite short and funnel-shaped, while in *I. Purdyi* it is slender and about an inch in length.

I. macrosiphon, as its name implies, has a long perianth tube three inches in length. It is a very rare plant but one of the most beautiful,

for it also is very floriferous and produces endless colour forms. The foliage is very narrow and of a curiously glaucous bluish green.

The somewhat insignificant plant that goes by the name of *I. Hartwegii* has pale straw-coloured flowers of no great merit. It is possible that it is only a local colour form of *I. tenax*; at any rate a purple-flowered form of it is said to grow in the San Bernardino mountains in Southern California, and I have failed so far to distinguish dried specimens of this from typical *I. tenax*.

The two remaining members of this group are *I. tenuis* and a hitherto unpublished species, probably of little value as a garden plant. Neither has apparently been as yet in cultivation in England, although I hope that I have at last succeeded in obtaining seeds of the latter.



"THE GENUS *IRIS*," by William Rickatson Dykes, just published by the Cambridge University Press, is a model of what a botanical book, serviceable to the horticulturist, ought to be. There are forty-seven coloured drawings by F. H. Round, not only beautifully executed, but exact in botanical details, also thirty line drawings and a coloured plate of seeds. The book is dedicated to the late Sir Michael Foster, and it has been said that the *Iris* Mantle has now fallen upon Mr. Dykes. The author is not merely a botanist whose knowledge has been gained in the Herbarium, but he is also a collector and a keen gardener. Proof of the latter exists in the fact that all the illustrations in the book, with one exception, were taken from plants growing in the open in the author's garden. The work is large and handsome, but the price of six guineas places it beyond the reach of the majority. We would like to see a cheaper book giving such descriptions and information, so that it would be useful to all who take an interest in the beautiful genus of the *Iris*.

CALANTHE VEITCHII.

THE increasing popularity of this robust terrestrial Orchid is easily understood, for everyone admires the graceful arching spikes, often 2-3 feet in length, which bear bright rose flowers in such profusion, and the gardener recognises it as a plant easily grown and which can brighten the duller period from November to February. As the plants finish blooming they will need a thorough rest, and then will lose their roots. The best time to repot is in spring when starting into growth: but, contrary to the general Orchid rule, they should be potted below the level of the rim of the pot as an ordinary plant. For the root medium use a substantial mixture of loam, leaf-mould, and dry cow-dung, with some silver sand, or corks broken small: careful drainage is an important item. When growing they enjoy strong heat and plenty of atmospheric moisture, and should never be allowed to get dry. Weak manure water is of great help when in vigorous growth. Scale is very partial to this plant, and frequent sponging is often necessary to eradicate it. *Calanthe Veitchii* belongs to the *Vestita* group of the *Calanthes* which are deciduous, and is a cross between *vestita* and *rosea*.

Sweet Peas.

By EDWARD COWDY, Greenhall, Loughgall, Co. Armagh.

THE past season was more or less unsatisfactory to the Sweet Pea exhibitor, following the glorious season of 1911. Some of the enthusiasts who had not their roots deeply embedded in the ups and downs of the culture of this beautiful and pleasure-giving annual must have got their ardour, if not themselves, well damped. However, it was a year of great bloom, and I have never seen finer flowers than those which were staged in the early part of the season.

The dreaded streak was not so prevalent, and I am firmly convinced that the great cause of this disease is the careless and too free use of nitrogenous manures. Certainly in the rows that I used no farmyard manure, and substituted two ounces to the square yard of sulphate of potash. I had no disease, and here I gathered some of my finest blooms. Of course my soil was fairly rich to begin with.

The secret of success in the cultivation of Sweet Pea, in my opinion, is deep and thorough trenching in the autumn or early spring; if this is done in the former, which is much more satisfactory, a small quantity of farmyard manure can be added with advantage, but it must be at least six months old, and then thoroughly incorporated with the soil in the lower part of trench, and none of it to come within nine inches of the surface, so that the young roots will not come in contact with it until they are able to bear the stimulant which it gives: to the top nine inches add the potash manures, and leave the surface rough. Then a good sprinkling of slacked lime should be shaken over the whole ground,

enough to whiten it as if there had been a shower of snow, and allowed to remain so until a week or so before planting time, which should never be sooner than 25th March, nor later than the 20th of April. If, however, the preparation of

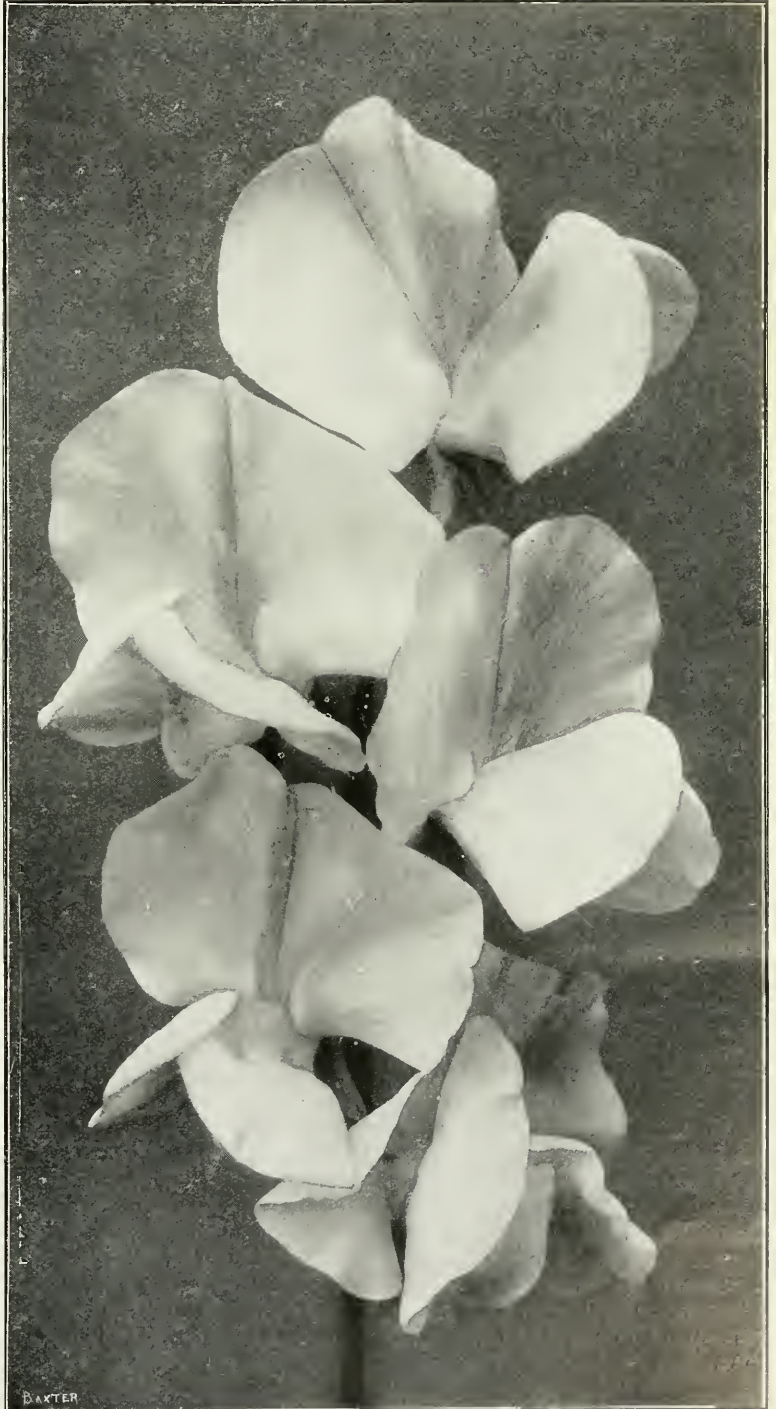


Photo by

ETTA DYKE.

[Hogg & Robertson]

the soil has been left until spring, I recommend no farmyard manure to be used unless it is thoroughly decayed: it is better to depend on good cultivation of the soil and potash manures and also the addition of the lime on the surface; if there is any deficiency of manure in the soil this can be made up in the feeding of the plants when in bloom.

The care of the plants when coming into or in full bloom is most important, especially to the exhibitor, and after numerous experiments I rely on the following:—Constant hoeing at the very least once a week; secondly, taking care that the roots are always kept reasonably moist by watering in dry weather with soot-water or water with the addition of a quarter ounce of sulphate of potash to the gallon, and every two weeks throughout the flowering season watering in or applying on a rainy day a nice dressing of Mackereth's Sweet Pea manure.

The principle of disbudding to two and three stems, as adopted by some exhibitors, is one I do not agree with, as without doubt it takes from the grace and elegance of the flower, and very often from the intensity of colour, and in most instances nothing but coarse rough flowers is the result. While disbudding to some extent can be carried out with advantage, it should be done with great care, and no matter how delicate the variety is, due account should be taken of the strength of the individual plant one is about to operate on. Some of the weakest growers we have will often carry four stems, and only in the case of a delicate plant would I be tempted to prune to two stems. In the case of vigorous growers, such as Mrs. C. W. Breadmore, Maud Holmes &c., five and six stems should be the rule, and certainly never less than four, as the plant that is not in good enough health to carry this number will rarely, if ever, be fit to give an exhibition bloom no matter how one disbuds it.

A few words to the exhibitor.

Many prizes are lost at the last fence. The flowers have been grown alright, but many have been brought to the show that should have been left at home, and many left at home that would have shone and caught the judge's eye.

It is not the enormous overgrown flower that the judges like to see. Indeed, I am sorry to say, there are exceptions, as I often see awards made in some of our local shows that should never have been made—exhibits containing large, coarse, and sometimes dirty flowers that may have lasted until the judge has passed, but if there had been any delay and the tent got warm the chance of success was absolutely gone.

When cutting for exhibition if one sees a large flower that is full-blown, or has the smallest blemish or spot on it, pull the head off it and trample it on the ground just for fear of being one flower short and being tempted to include it in your bunch. Go one short by all means: bring a stem instead with two flowers on it: do anything but bring a flower that is sure to spoil the whole lot. Judges are looking for weak spots, not for perfect blooms, and you need not think to hide these imperfections, as the judge is sure to find them. Have your flowers clean, young, and fresh.

The careless staging of good blooms accounts for the loss of numerous prizes. Go to the show early, take things quietly, do not bother about your opponents' flowers—in fact do not look at them, your eye always catches their best ones. Stage your poorest bunches first, and take more time and care with them; but always remember no matter how good you are, you have nothing to spare, and you have not won a prize, no matter how many onlookers tell you that yours are the best, until the judge has placed the prize card on your stand; then, and then only, can you draw a sigh of relief.

Sweet Peas and other P.s.

PLUCK *versus* LUCK.

By E. OSBORNE, Cowslip Lodge, Drogheda.

I AM writing as an amateur exhibitor to other amateur exhibitors—just a few notes on how to win. I am sure we have all had that remark made to us: "Oh! how lucky you were to win," as if it was some lottery and we had drawn the winning number, and that is the end of it. One feels that in the back of the speaker's mind is the idea: "What is the use of showing against such a persistently lucky person." These are usually the type of people who enter a lot of things from their garden, and if there is anything good they send it to the show, and are then greatly huffed when they do not win—cannot understand it—the flowers looked so well in the garden, &c., &c. And as things are at present at the shows—be it at the Horticultural in Dublin, the big show in Belfast, or the small flower shows that are attached to the numerous agricultural shows—wherever you go the competition is keen, and as far as I have seen the best man wins. There is practically no luck in it, but unlimited pluck.

Our first P. must be *Preparation* of the ground. Now, I am not going into this. Those seedsmen who specialise in Sweet Peas have a page or two of their catalogues given up to

preparation. Dig deeply as early as possible, the earlier the better. As the old worthy who sometimes digs in this garden says: "Turn it up and under, and let the frost at it—its as good as half manure." When we mix in the manure—if possible cow manure on light land, horse manure on heavy—let us mix in some air-slaked lime. I had been brought up to believe that to mix lime with manure injured the fertilising properties of the latter: well, it may do so for some things, but certainly not for Sweet Peas. Let us read what we can about the preparation of the ground, but let us see to it that the digging and trenching are done. The grower of the finest Sweet Peas shown in Ireland in 1912 told me that he trenches his ground six feet deep. I saw lately in a gardening paper a paragraph telling of a man who was in an office all day. He made up his mind to trench his garden, so he bought two big flare lamps and did the job by their light. I hope he will win.

Another P. is *Promptness*. Do not wait till everyone else has bought the cream of the Sweet Pea seed. I do not mean all the novelties: many of them would be beyond our means, and many of them will be no better than the older varieties. Get one or more, but for the real stand-by get some of the well-known varieties. The following are old friends of mine, and if well grown very hard to beat:—Mrs. Hardcastle Sykes (pale pink), Clara Curtis (cream), Helen Lewis (orange pink), Etta Dyke (white), Edna Unwin Improved or Thomas Stevenson (orange scarlet), and Nettie Jenkins (lavender), this makes a great six; and for thirteen:—Elsie Herbert (white edged pink), Evelyn Hemus or Mrs. C. W. Breadmore (cream edged pink), Earl Spencer (orange), John Ingman (carmine), Constance Oliver (cream pink), and one of the crimson—Dobbie's or Maud Holmes or King Edward Spencer, and for a dark shade Nubian. I give the above because I know they are good and they are distinct. If you grow these thirteen varieties, purchasing the seed from a reliable source, and do them well, you will be sure of a distinct six or twelve bunches.

Often one sees at a show someone exhibiting fine big flowers on good stems, but each bunch of the six or twelve is of an uninteresting shade, dirty blue or dull pink—this latter is very prominent as a rule.

Bright coloured flowers well set up, each bunch, be it white or pink or cream or lavender, or any of the other exquisite shades, fresh and spotless, the owner of these will probably see the coveted red card on them when the judging is over.

Will anyone agree with me that the spotting,

which is usually attributed to rain, really comes from badly prepared ground? I have seen flowers spotted as the pard, and I know they were grown on plants planted in this case in heavy land. Some trenching had been done, but after the plants were planted out and staked no further care was given: no forking along the rows, no dressings of liquid manures; the earth all hard and congealed with rain and sun. I do not believe the roots could work well under such circumstances as these; and if the roots are not working and finding plenty of easily assimilated food we cannot expect clear coloured flowers. A tank or barrel of rain-water in which a sackful of soot has been soaking for some time, some sweepings of the hen house, and some cow manure or sheep droppings if obtainable: all this stirred up, and say half an ounce of nitrate of soda mixed with each gallon and applied to the Sweet Pea plants after rain if possible. If there is no rain, water well with clear rain-water, or well-water which has been in a tub in the sunshine for some hours. Do not ever water with well or pump-water at the temperature at which it is drawn from the well or pump. This liquid manure is very safe and brings up the colour, but we must vary it and give one of the patent Sweet Pea manures. Mackereth's is good, and has in it the required amount of iron necessary for the colour making.

Our third P. is *Perseverance*. This we must have if we as exhibitors are to get out of the list of the "also ran."

Having dug our ground and bought our seeds we proceed to sow them. This year I am chipping all the seeds, and I find they are germinating splendidly. The chipping is easily done: with a sharp knife cut a nick or chip completely away a tiny patch of the outer skin of the seed as far away as possible from the scar.

Sweet Peas are quite hardy no doubt, but just when they are springing up it does not take much to injure them—excessive damp, a drip in the greenhouse, or slugs, not to speak of mice. Never shall I forget sowing seven dozen valuable seeds of Sweet Peas in a greenhouse, and next morning finding they had every one been eaten by mice. Since that episode I sow in boxes and stand them in a warm cellar till the seedlings show; then I put them in a spare room window; they do get rather drawn up, but later one can nip them back, and when the days get longer and the sun stronger I stand them out in a sunny position, and they harden off quick enough. When they get hardy one can plant them out in their permanent positions. In 1911 I planted out the first batch about Feb. 12th,

but as a rule I find plants and weather generally suit between the 17th to the 25th of March.

I find it a good plan to put a stout post to the end of each row and run two strands of galvanised wire from post to post—one strand about three feet and the other about six feet from the ground. The pea stakes are put in as usual, but lean against the wire to which they are tied. It takes about half the quantity of stakes and is a very strong erection, standing practically any wind; one can tie the Sweet Pea shoots to it as they grow up and are thinned out. Always leave a young shoot or two to cut back to; you will want the fresh young shoots for some of the later shows. I hope we will all have



Photo by]

A RHODODENDRON WALK.

[C. F. B.

a lucky time in 1913. I am sure we will be hard to beat if we stick to the three P.s.

I read these quaint verses in a journal of sorts; they are rather suitable for us amateurs.

" If the day looks kinder gloomy,
An' your chances kinder slim,
If the situation's puzzlin',
An' the prospect's awful grim,
An' perplexities keep pressin'
Till all hope is nearly gone,
Jus' bristle up, an' grit your teeth,
An' keep on keepin' on.

" Fumin' never wins a fight,
An' frettin' never pays;
There ain't no good in broodin' in
The pessimistic ways.
Smile jus' kinder cheerfully
When hope is nearly gone,
An' bristle up, an' grit your teeth,
An' keep on keepin' on."

Rhododendrons.

By J. W. BESANT.

OF all the evergreen shrubs hardy in this country the hybrid Rhododendrons are certainly the most gorgeous. They are eminently suited for massing in beds, for informal grouping in thin open woodlands, by the margins of woods, and finely developed single specimens are effective on lawns.

An ideal site for Rhododendrons is one where the natural soil is open and well drained, a sandy loam for preference, and shade from fierce sunlight. Such a soil only requires a small quantity of peat or leaf-mould forked into the top spit for the retention of moisture in times of drought.

Rhododendrons are moisture lovers, but will not stand stagnant water about the roots, hence it is necessary to break up the soil at least two feet deep to assist the percolation of surface water as well as to encourage the rise of moisture in times of drought. In shady glens and valleys, where evaporation is less rapid than in the open and where on the slopes water is quickly drained away, Rhododendrons are generally happy.

Visitors to the Howth domain in Rhododendron time must have admired the glorious display made by plants growing among the steep rocks where the roots are always cool and

sweet, and the rocks give off a sufficient supply of moisture during dry weather.

Many of the species of Rhododendrons are epiphytes growing on the branches of trees in the Himalayas; and in no case, whether on trees or not, are the roots far below the surface. Consequently it has been found in actual practice that the nearer the surface the roots are kept, the better the plants thrive. In some situations this might lead to the roots being dried up, but this may be obviated by the application of a mulch of half-decayed leaves at planting time and annually for a few years while the plants are small. The root system of a Rhododendron is a dense compact mass of fine hair-like fibres which, unlike many other shrubs, never extends in proportion to the spread of the branches. Therefore, though mulching is very necessary while the branch system is just

beginning to develop, in after years the branches and leaves shade the roots, and will naturally provide their own mulch. Often, however, old plants which have probably been flowering freely for years will show signs of exhaustion in the yellowing of the leaves, then an application of leaf mould will generally put things right again.

After the flowers are past their best it is a good practice, too frequently overlooked, to go over the plants and remove the young seed pods, which greatly exhaust the plant.

It may be well to repeat an oft given warning, that Rhododendrons will not grow where there is lime in the soil.

Rhododendrons are excellent town shrubs, seemingly able to withstand the sooty deposit so detrimental to many plants and perhaps enjoying the partial shade caused by the smoke pall which overhangs all large cities. It would be unwise to say that all Rhododendrons will stand the impurities of a town atmosphere, as probably only a percentage of the varieties have ever been tried, but the writer has seen a fine bank of them thriving well within the smoke area in Glasgow, and there also Cunningham's White used to do well in the parks.

In the matter of selection much must be left to individual taste. In colour there is plenty of choice, as there are white, rose, red, crimson, scarlet and purple varieties, and great variation in habit and growth. There are, of course, outstanding varieties, and a limited selection of these is given below.

As to the best time to plant, Rhododendrons are wonderfully accommodating. The root system, as stated above, is so compact that they lift well at any time, and with ordinary care will usually succeed if planted any time during

mild weather. Probably early autumn and late spring are the two most suitable seasons; in the latter case protection from drought is important.

Varieties.—White or white with yellow or dark spots—Mad. Carvalho, Purity, Mrs. John Clutton, Sappho. White with rose edge—Helen Waterer. Crimson—John Waterer and Cynthia. Rose shades—Kate Waterer, Lord Palmerston. Pink shades—Rosa Mundi (a dwarf variety), Mrs. Stirling, Pink Pearl and Manglesii, the latter perhaps a little tender. Scarlet—Don-



Photo by

PÆONIA CAMBESSEDESI.

[C. F. B

A New Pæonia found in Majorca by an Irish lady.

easter. Red—Ascot Brilliant. Lilac—Lady Grey Egerton, James Nasmyth and fastuosum fl. pl.

Pæonia Cambessedesi.

THIS new Pæonia is a native of the Balearic Islands and Corsica, and was introduced to cultivation by Miss Frances Geoghegan, who found it growing in a very rocky and almost inaccessible spot on Cape Formentor, in the Island of Majorca. For some years Miss Geoghegan grew the plant in her beautiful garden at Donabate; then, giving up the garden there, she kindly presented it to the Glasnevin

Botanic Gardens. Its nearest relative is the European *P. corallina*. In growth it is dwarf, only about a foot and a half high. The stems are smooth and reddish, and bear handsome divided foliage, green above and reddish on the under surface. The flowers are solitary, prettily crimped, a deep rose-pink in colour, eup-shaped, and from $3\frac{1}{2}$ to 4 inches across. The filaments are purple, and bear yellow anthers, while the carpels are reddish-purple and quite smooth. The flowers are produced in April, so that it is one of the earliest of the genus to flower. Most Peonies take a long time to flower when raised from seeds, but *P. Cambessedesi* has flowered in about $2\frac{1}{2}$ years from the time of sowing. One of the most striking points about the plant is the brilliant crimson colour of the young stems as they appear in spring: many other kinds are bright in this way, yet none are quite so brilliant as *P. Cambessedesi*.

Beautiful effects can be obtained by bels of Peonies with Daffodils planted between them. The Daffodils flower when the Peonies are pushing up their growths, and the soft yellows form a pleasing combination with the brown-red Peony stems.

There are other bulbs which could be planted in Peony beds to give a display in autumn, such as the *Gladiolus*, while, if the Peonies are planted a fair distance apart, the foliage just gives the needed protection to such Lilies as *L. Martagon*, *excelsum*, *candidum*, and *L. tigrinum*. The common garden Peony (*P. officinalis*) and other European species, although they do best in an open position, yet are excellent plants for a shady site, while for a grassy bank or naturalised in a meadow they are equally suitable, and give fine bold effects.

The varieties of the Chinese Peony give us the best garden plants, their satiny petals ranging from snow-white to blush-pink crimson and purple: some are almost as sweet-scented as the rose, and vary from double, semi-double to the beautiful single. They may be planted up to the end of March; large clumps can be divided to about five or six crowns each, and then need not be disturbed for many years to come. Once planted in good soil all they require is to be left alone, for they dislike change. Peonies revel in a deep rich soil, and on the other hand soon show their resentment to a poor, hungry one by producing weak growth and few flowers.—C. F. B.



CONVOLVULUS CANTABRICA.

A SILVERY leaved species, with pretty pink flowers: the stems are spreading only about a foot high, so that it is well suited for the rockery. Its home is in Southern Europe: in Bulgaria it grows on dry limestone hills.

Plant Notes.

IRIS RETICULATA HISTRIOIDES.

A GROUP of this charming Iris is indeed a most welcome sight in the dark wintry days of January or February. The flowers, which are produced before the leaves appear, are from 1-5 inches across, and of a beautiful violet blue colour. The ridge of the fall is a bright golden yellow, and the falls are tinged with white. The flowers possess a delicate fragrance which is most pronounced when the plants are growing in a sheltered position. If gathered when in bud the flowers last over a week in water. The base of a south wall is an ideal position for this Iris.

SCABIOSA CAUCASICA.

THIS plant, a native of the Caucasus, was introduced to this country in 1802. It is one of the most useful subjects for the front of the herbaceous border. It grows from 1-3 feet high, and the flowers, which are of a beautiful soft lilac blue, are borne continuously from June to August, being carried on stiff stalks about 1 foot long and lasting well in water: they are much prized for cutting. The variety *alba* bears beautiful pure white flowers. *S. caucasica perfecta* is a vast improvement on the type. The plant is readily propagated by division of the root stock in early autumn or spring, or seeds may be sown when ripe in the open border or in boxes.—S. R.

CONVOLVULUS ALTHAEOIDES.

THE correct name of the plant usually grown in gardens under this name is *Convolvulus tenuissimus*; it is a beautiful hardy climber, with leaves digitately divided into long narrow segments of a lovely silver colour, and bears bright pink flowers. When established it is inclined to spread quickly by underground stems. The true *Convolvulus althaeoides*, although rarer, is not such a good garden plant: it is more hairy, with leaves not so deeply divided or so silvery: the flowers are larger, but of a duller pink. The radical leaves of both species are usually entire. The plant figured in the Botanical Magazine T. 359 as *C. althaeoides* is really *C. tenuissimus*.

DAPHNES.

THREE beautiful and strongly-scented Daphnes are now in flower at the end of January—namely, *D. Mezereum*, *D. blagayana* and *D. Dauphini*. *D. blagayana*, a native of Carniola, is a dwarf spreading evergreen with clustered white flowers, well suited for the rockery. *Daphne Dauphini* is a hybrid of *D. sericea* and *odora*: its sweet-scented reddish flowers are usually produced in February; being both evergreen and hardy, it is a shrub which ought to be more extensively planted in gardens. Both white and red forms of the beautiful *Daphne Mezereum* are largely grown, but care is required where children are about, as the berries are poisonous. Linnaeus in his *Flora Lapponica* writes:—"I have seen the peasantry in Scania give one of the berries to their companions by way of a joke. After it has been a time ingested, it produces a burning heat in the throat, which the sufferer endeavours to extinguish by copious draughts of ale; but this is like pouring oil upon the fire: hence they call the plant *Sorbypeppar* and *Kollerhals*—i.e., cellar-opener."

School Gardening.

"If any choose to be critics, it is but saying they are critics: and from that time forward they become invested with full power and authority over every catfiff who aims at their instruction." So wrote Oliver Goldsmith, and his words are as true in our day as they were in the middle of the eighteenth century—so much so that they make one pause before undertaking the rôle of critic. None the less when an importunate editor insists on a contribution, and puts into one's hands a book* which he wants reviewing, it behoves any well-wisher of IRISH GARDENING to give such help as he can. Unfortunately, however, this particular work opens up a question of such moment that the sale of a few copies more or less of it sinks into utter insignificance beside the great issues involved. Before, therefore, descending to details let us consider what is meant by "school gardening," and—clearing our minds of prejudices—try to determine whether gardening in any form should find a place on the school time-table.

It is true that many would-be educational reformers in this and other countries (and especially in the United States) have no doubt whatever on the subject. But confidence is as often begotten of ignorance and inexperience as of knowledge: and it would be well, therefore, that all put in authority over our schools should examine carefully the claims made on behalf of this new candidate for their suffrages.

We are told that to teach gardening to boys in our village schools will tend to keep people on the land, and thus do something to supply the deficiency in rural labour. It is very doubtful whether this would be its effect. Even, however, if it were so, that is no justification for our stunting the intellectual progress of the whole, and handicapping them in life's race, in order that some may be constrained or induced to furnish cheap labour on local farms and domains. For it must be remembered that a countryside—at any rate under present economic conditions—can offer a living wage to only a small proportion of the youths it rears, and further, that the introduction of every fresh subject into the school curriculum means diminished efficiency in the teaching of the rest. Now, there are certain things every boy, whatever his future calling is to be, has a right to be taught, and taught so well that they remain to him sources of power and pleasure through life. The time spent at school is not long enough for more than these essentials—and gardening is not one of them.

Again, it is hoped that by teaching practical horticulture in schools cottage gardens will be improved and the amenities of village life increased. This is a very praiseworthy object, but the price to be paid for it is too high. Moreover, it is a reform that may well be effected by other agents than the village schoolmaster and his pupils. On them devolves the higher duty of raising the whole intellectual tone of the country.

We are told, too, that the teaching of gardening will have a wonderful effect in increasing the interest of the children in the things around them, and that this effect will prove such a stimulus to their intellects as to more than compensate for the time absorbed. But the essential subjects must be very badly taught if such stimulus is

needed: and the teacher who will kill the interest of these is not likely to make gardening an educational instrument.

That our author—who occupies a responsible position as supervisor of school gardens in the west of Scotland—fails to do so is evident from nearly every page of his book—a book which, be it said, is intended primarily for teachers and is included by the publishers in their series of "Text-Books on Education." This is an extract from the chapter dealing with manures.

"The application of farmyard manure and probably all organic manures, and also nitrate of soda, diminishes the loss of carbonate of lime in the soil. Sulphate of ammonia removes half its own weight of lime and nearly the whole of its own weight of chalk from the soil, but an application of lime restores the balance in the soil. Lime is also being constantly removed from the surface soil by rain. Lime does not sink in the soil as is generally supposed, but the soil is raised by earthworms on grass land, and on arable land the lime wastes by solution."

Remembering that no one can teach up to the border-line of his own knowledge, we can form some idea of the chaotic state of mind of a pupil of a teacher deriving his information from the above. It would be difficult to find a better (or worse) example of how not to teach. It is just these half explanations and strings of facts that have been the curse of horticultural and agricultural teaching so called: and one expected something better from such an author and such publishers. We would advise them both to contrast with the above the following from E. J. Russell's charming little work,* "Lessons on Soil":—

"We will make a few experiments to find out what lime does to clay. Put some clay on to a perforated tin disk in a funnel, just as you did on p. 11, press it down so that no water can pass through. Then sprinkle on to the clay some powdered lime and add rain-water. Soon the water begins to leak through, though it could not do so before: the addition of the lime, therefore, has altered the clay."

"Lime has a remarkable action on clay. It makes the little, tiny pieces stick together to form feathery flocks which sink in water: lime therefore causes muddy clay water to become clear. The flocks cannot hold water back, and hence limed clay allows water to pass through. Limed clay is also less sticky than pure clay."

What school gardening is apt to degenerate into may be gauged by the following extracts from a pupil's note-book, given by the author. They represent the work done at four successive weekly lessons:—

"16th Sept.—This week I revised my notes on soils, and then went outside and gathered the radishes, potatoes, beans, and peas."

"23rd Sept.—This week I revised my notes on soils, filled in my weather report, and helped to plant the garden frame."

"30th Sept.—This week I continued revising my notes on soils, filled in my weather report, and went outside and began to clean my tools."

"7th Oct.—I finished revising notes on soils. I then went outside and started to trim the hedge. I also got a lesson on how to take cuttings of plants and how to place them in the cold frame."

*"School Gardening," with a Guide to Horticulture. By A. Hosking. 1p. xi. 32s. (London: W. B. Clive, 1912.) Price, 3s. 6d.

*It is strange that this suggestive little work should be omitted from the (absurd) list of Works of Reference recommended by Mr. Hosking.

One would like to see these same "notes on soils," and to question the youth thereon.

Mr. Hosking has a good deal to say about "correlation": in fact he devotes some pages to showing how his subject may be made to dovetail into (and presumably benefit) the instruction in drawing, nature study, botany, arithmetic, mensuration, reading, composition, and cookery. In this he is but following the example of some other advocates in whose mouths the term sounds dangerously like cant. Here is an example of how far he gets in his correlating:—

"Window boxes for the cultivation of plants are easily made by a handy man, or a joiner would supply them at a cheap rate."

Or take the following extract from a pupil's diary:—

"We were out measuring the size of the whole garden, and we found it was 181 feet by 10 feet, and its area was 902 square yards. We also measured the vegetable plots, and found them to be 27 feet by 9 feet. The measuring was done by a chain which measured 66 feet—100 links—so we came inside and found the area in square yards."

Ignoring the fact that there is something faulty in the wording or wrong in the reckoning, we see that the teaching is defective in two particulars. The instructor seems to be ignorant of the genesis and use of the ordinary land chain, and mental arithmetic is being neglected—"and so we came inside." Space does not permit of our multiplying instances of the author's unfitness for the work of education. When he is compiling tables, making lists, or giving cultural directions of the cookery recipe type he is on safer ground: but when he deals with underlying principles he illumines nothing that he touches.

Intensive Culture of Vegetables: French System.*

THIS book, comprising nearly 200 pages, treats very fully with the growing of vegetables on the French system, and is written by a most practical man, who not only understands the system thoroughly, but has managed a French garden in England for years.

All the details of the work are given and an estimate of the cost. What most strikes one who has not studied the system closely is the enormous amount of glass, water and manure required.

Some fifty pages of the book are taken up with tools and appliances. One hundred pages are given to monthly cultural operations, and here all lovers of the garden, young and old, will find much valuable information in growing vegetables for the market and the home. The remaining pages give a list of garden pests and many useful hints on seed saving. These chapters alone should cause the book to have a wide circulation in this country, where the want of sunshine has caused many failures to those taking up the system. Another cause of failure was the need of a good book on the subject now supplied in the volume before me.

To Irish gardeners I would say—Get the book and read carefully Chapter IX. on Mushroom Growing. This chapter is most instructive.—W. T.

* Published by Upcott Gill, Bazaar Buildings, Drury Lane W2.
Price 3s. 6d. net

The Sweet Pea Annual.

THE Sweet Pea Annual for 1913, which is the official organ of the National Sweet Pea Society, is now ready, and can be had for 2s. post free from Mr. C. H. Curtis, Adelaide Road, Brentford, Middlesex. It is the ninth issue, and easily the best of the series, containing among other good things "Impressions of the Sweet Pea Show, 1912," by Mr. Lester L. Morse, of San Francisco, who mentions incidentally that there are 1,700 acres in California under Sweet Peas, producing no less than one million pounds weight of seed annually. Mr. J. A. Grigor, Scottish Champion Cup Winner, 1912, gives some valuable "Cultural Notes." Mr. W. Cuthbertson writes on the "Raising of New Varieties," and Mr. J. A. Bull describes how he fought the "*Streak*" and prevailed. The Annual also contains a full Report of the Sweet Pea Conference last year, including a most exhaustive lecture on "Rogues" in Sweet Peas, by Major Hurst, Superintendent of the Society's Sweet Pea Trials, followed by an animated discussion by nearly all the Sweet Pea growers present. This lecture and report should make "The Annual" invaluable to all who are interested in the development and variations in the "Queen" of garden annuals. A Society which issues such a yearly volume as this, and which carries out on such exhaustive and progressive lines the testing of the new varieties at their trial grounds, deserves the ardent and active support of all Sweet Pea lovers. Its membership is now over 1,300, but Mr. C. H. Curtis will cordially welcome all new applicants for membership: the subscription is only 5s. per annum. The Society will hold two Exhibitions this year—one in London in July and the second at Carlisle in August. See advertisement, page i.



POLYGONUM BALDSCHEANICUM.

ONE of the most desirable of hardy climbing plants for poles, arbours, trellises, or it can convert old stumps of trees or shabby Conifers into objects of beauty by its graceful festoons of heart-shaped leaves, which are supplemented in summer and autumn by feathery panicles of creamy-white and rose-coloured flowers in abundance. Its propagation is usually considered a rather difficult matter, as ordinary cuttings do not strike readily; layering is the mode often recommended, but even layers often refuse to emit roots. Nice batches of plants are sometimes obtained by taking well-ripened shoots, cutting them into separate eyes, making them as in vine-eyes, about two inches in length, the cut being made obliquely from the opposite side to the bud. After thus being prepared they are pressed into pans of sandy soil until the eyes are just level with the soil. The pans are then placed in a propagating frame with a bottom heat of 60° to 65°. In a few weeks roots are produced and the plants commence to grow, being then carefully potted up.



This learned I from the shadow of a tree—
That to and fro did sway upon a wall—
Our shadow selves, our influence may fall
Where we can never be. —Harold Begbie.

Hints to Amateurs.

By R. M. POLLOCK.

GOOSEBERRIES and black and red currants can now be propagated by cuttings. In preparing these the same method should be followed for gooseberries and red currants. Cut out some of the best of last summer's growth, about 14 inches in length, remove the weak soft top of the shoot, cutting it off just above a bud, and then cut the lower end of the cutting straight across below a bud or joint with a clean sharp knife, removing the buds for about 7 inches up the shoot. Put down a line, and with a spade open a narrow trench about 6 inches deep, and in this place the cuttings firmly, about 6 inches apart. Fill in with soil, and firm the cuttings well, leaving them all straight in the line and level at the top. If more than one line is required the rows may be 12 inches apart. The removing of the lower buds prevents shoots springing directly up from the base of the young plant, and gives the plant a few inches of "neck," thus bringing the lower branches well up off the ground, so that when carrying a crop the fruit will not get mud splashed.

The method also applies to red currants, but in the case of black currants, the buds at the base of the cutting need not be removed, as here it is the strong growths direct from the base that are wanted, as the fruit in black currants is borne on the young wood. They may be inserted in exactly the same manner as described for gooseberries and red currants.

When pruning fruit trees, especially apples and pears, it is well to save a few of the best prunings to use later on as grafts. Put them in a north border, the different varieties tied together, and they will be quite safe. Some one may take a fancy for a special variety and be glad to have a few grafts.

When nailing fruit trees, or any plants, to a wall, be very careful that the ties, whether of raffia, string, or shreds, are not too tight, which when growth begins would squeeze and injure the branch. Also that the nails holding the ties are not too close to the branches, which would bruise the bark and cause decay to set up. When tying, especially where there is any strain, the branch should lie in the tie, not on the nail as is often seen, and the tie should not be drawn so tight as to bring the branch up close to the nail. Look over and loosen old ties, and where necessary renew them. Insects love to harbour during the cold winter in cloth shreds, and appear when the first warm sun tempts them.

Early this month all fruit trees should be sprayed with the "cleansing wash" or "caustic spray." This can be easily prepared on the premises, and be applied to apples, pears, plums, damsons, cherries, apricots and peaches (outside), gooseberries and currants, in the following proportions:—Two pounds caustic soda (98 per cent.), half a pound soft soap to 10 gallons water. This mixture must be used warm, otherwise the soap will clog the sprayer or whatever instrument it is applied with. Where possible it is advisable to use a sprayer, but in small establishments it may not be available, in which case a fine nozzled garden syringe will do, although, of course, this is more wasteful than a sprayer. See that the spray reaches all over the trees, and apply the spray on a fine day.

The first batch of Sweet Peas may now be sown in pots. This can be done in two ways—one

seed can be put singly in a thumb pot, or as is usually done, five or six seeds in a 5-inch pot. Fill the pots with good loam mixed with leaf-mould and sand to within 2 inches of the top, firm the soil, and place the seeds evenly round the pot, putting one in the centre. Cover these with an inch of finer soil, obtained by passing some of the mixture through a sieve, and smooth the surface over. This will leave about an inch of room in the pot, which will allow for watering. The pots may then be placed in a bright frost-proof house, frame, or even in a bright window. If in the latter, as soon as the seeds germinate and come above the soil, they will have to be kept turned, as the light being only on one side, they would grow crooked. There are articles in this number from which more details can be got.

Dahlia tubers may now be started. When taken from their winter quarters they look very shrivelled and miserable. Put them in boxes, a little soil may be scattered over them, and place these boxes in the greenhouse; if hot pipes are available, put the boxes on these, and water very lightly with a fine rose-can. In a very short while the shrivelled appearance will disappear and the young roots and shoots make their appearance. There are three distinct methods of propagating Dahlias—by seed, by cuttings, and by division. The first two require some heat, the latter is the poor man's way, but answers the purpose just as well if properly done. This method, however, should not be attempted until later on, say April or May. Seed of most of the classes of Dahlias can be obtained, and this should be sown in pot, boxes or pans in rather sandy soil. Pot off as they require it into good soil, but keep the plants as strong as possible, and avoid all tendency to hurry them on by forcing.

More care will be required in propagating by cuttings. Take the sturdy young shoots that come from the tubers that were placed in the boxes. The long hollow shoots are useless, and will never give satisfaction. Cut the shoot off straight where it springs from the tuber, and insert it firmly in a small pot. The warm atmosphere of the house will soon make the cuttings stiff and happy looking, and in a short time they will have rooted. As the pots become full of roots, pot them on into larger pots, and give them plenty of air while in this young state. Directions for propagation by division will be given in a future issue.

GREENHOUSE.—Begonias and Gloxinias may be started. Place the tubers as described for Dahlias in boxes, and when they start making growth, pot them on singly in 5 or 6-inch pots. Gloxinias will require more heat than the Begonias if good results are required. Where necessary greenhouse plants may be repotted, but care should be taken not to do this rashly, and very often a good topdressing will be sufficient. Another batch of Zonal Pelargoniums may be taken during the month and potted singly in small pots. Those that were put in in October or November will now be ready for shifting to 1-inch pots, and those put in in the summer may get a final shift into their flowering pots (6-inch). The first lot of rooted Chrysanthemum cuttings will also be ready. Pot these either singly in 4-inch pots or three in 5-inch pots.

Mowing machines should now be looked over, and those requiring repairing should be sent off at once. As soon as the weather settles down and the ground dries a first cutting of lawns may be given.

Hardy Annuals.

By M. CROSBIE.

It is a pity that one finds it necessary to repeat again and again the same question—"Why are hardy annuals not well-grown in every garden?" for, as a rule (with the exception of Sweet Pea), they are either badly treated or else not grown at all. There is no reason for this, because no plants give a quicker or more liberal return for a little care and attention. The general idea seems to be that annuals are such a short time in bloom that it is not worth while taking any trouble over them, but, as a matter of fact, numbers of the best remain in bloom for eight or nine weeks—for instance, Larkspurs, Lupins, Mallows, Mignonette, Nasturtiums, &c., &c., to mention only a few. The Larkspurs, most beautiful either for garden or house decoration, will, if sown in the autumn, grow to a height of five feet, and begin to bloom early in July, lasting till cut by frost, usually at the end of October.

There was a magnificent display of annuals at the show at Chelsea last May; it must have been an eye-opener to many, being a very striking demonstration both of the diversity in colour, shape and habit and of the splendid effect to be got from them. Well-grown bushy plants were shown singly, each covered with blossom from the base up, so different from the weedy starved specimens usually to be seen in gardens.

With a few exceptions hardy annuals do not make good subjects for beds cut in grass. They show to best advantage either by themselves in a border which has a good background, or else boldly grouped in a mixed border. They are very useful too for making patches of colour in the front of shrub beds and borders. They seem to require the substance and background given them by perennial plants to show their vivid colourings to perfection, as they themselves are somewhat deficient in foliage, and any they have is hidden by the profusion of flowers. In every garden, however small, some odd piece of ground will be found, where perhaps spring bulbs have been, that could be made gay for the summer with a good clump of Shirley Poppies or Marigolds. In the border they come in at a time when it rather lacks brightness, when the first glory of the summer flowers is passed and before any of the autumn ones have taken their place; and at a time when yellow is the prevailing colour in herbaceous plants, their brilliant reds and pink help to preserve the balance in the scheme of colour.

They are most unexact in their requirements, ordinary well-worked garden soil, with the addition of some old manure before sowing or planting, suiting them admirably. They like an open position with plenty of sunshine. But usually it is neither the soil nor situation that causes the failure, but want of room: first, they are sown much too thickly, then not sufficiently thinned. Remember that they are no better able to struggle with one another for existence than any other cultivated plants, and from the time they germinate give each seedling plenty of room to develop.

If possible it is much better to sow them in the autumn, but the usual method is to sow them in their flowering quarters in the spring. In this case have the ground turned up roughly during the winter, and before sowing dig in some well-rotted manure, make the surface soil as fine as possible, and choose a dry day for sowing. When

they are up, thin rigorously, and keep a good look out for slugs and snails, &c. Then, later on, watering and staking must be attended to. Owing to the rapidity with which they grow and to their lack of any reserve food supply, they well repay for plenty of feeding. Very often, when they have once been sown and have flowered in a border, self-sown seedlings will be found the next spring, and these natural autumn sown seedlings make stronger,



Photo by

MALOPE GRANDIFLORA

[Webb & Sons]

healthier plants than any hand sown ones. If, as it often happens, they come up where they cannot be left to blossom; lift carefully when the ground is moist, and plant wherever you want them to bloom. This can be safely done with all of them except the Poppy family, which is always very impatient of any transplanting.

In some favoured spots it will be found quite satisfactory to sow in seed beds out of doors in September, and where this can be done the little plants have only to be transferred from there to their flowering quarters in the spring. Another method, and the one the most strongly to be recommended as giving by far the best results and being the most satisfactory in every way, is to sow in November in boxes in cold frames. Choose an open sunny position for the frame, and give plenty of air every fine day, and only in very severe frost will they require a mat over the frame.

When they are large enough to handle, early in February, prick them off into boxes, keep close in the frame for a few days until they have recovered the move, and after that the light may be taken completely off every fine day, as it is most important that the seedlings should not get drawn.

In April the plants ought to be fine and sturdy, quite fit for their permanent quarters, once there they will grow very rapidly, and when in bloom will quite repay the little extra trouble. Grown this way they will be found most useful for putting into ground that has been occupied by spring bulbs. If one waits to sow until the ground has been cleared of the spring stuff, the annuals will not flower until late, and there will be gaps for a long time, whereas if they go in as plants a few inches high, they will bloom in a very short time.

A few names of some of the best hardy annuals may be of use:—

Lupins in various colours: *Lavatera trimestris*, the pink and white Mallows (*Malope*), Larkspurs, both stock flowered and dwarf, in various shades, rosy scarlet and dark blue being particularly fine: *Clarkia elegans*, Salmon Queen, Scarlet Queen and Firefly all being good: Candytuft, White Spiral and Carmine, the leaves and stems of the latter turn bright red in the autumn and make it showy even when out of bloom: *Eschscholtzias*, Carmine and Ruby King: *Godetias* in variety, *Schamini* being the best: *Chrysanthemum*, Morning and Evening Star, *Nigella Miss Jekyll*, Sweet Sultan, The Bride and Chameleon and double dwarf scabious.



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GORSE.

Mountain blossoms, shining blossoms,
Do ye teach us to be glad
When no summer can be had,
Blooming in our inward bosoms?
Ye, whom God preserveth still,
Set as lights upon a hill,
Tokens to the wintry earth that Beauty
liveth still!

— Elizabeth B. Browning,
"Less us from the Gorse."

Salvia splendens

To obtain good specimens of this brilliant scarlet winter flowering greenhouse plant preparations should be made without delay. Select a few plants that have finished blooming, remove all the old flowering spikes, and place the plants in a growing temperature to produce cuttings. When these are a few inches long they should be taken off and cut at a leaf joint. Three or four may be inserted in each small pot in a light sandy compost and placed in the propagating frame. As soon as they are well rooted remove them to a shelf in a warm house for a few days, then pot singly into 3-inch pots, give a good watering and place the plants on the shelf again. Daily syringings will encourage growth, also help to keep down insect pests. As growth advances a cooler temperature with more air admitted will be beneficial. For the final potting, pots 8 or 9 inches in diameter are large enough. The soil should consist of good rough fibrous loam and leaf-mould, with sufficient sand added to keep it open, also a 6-inch pot full of bone meal to the barrow of soil. Pot moderately firm, then place

the plants in a cold frame in a partly shaded position. When well established in the new soil the lights of frame may be removed on warm days. From the commencement of potting they should receive attention with regard to pinching to make the plants bushy, but care must be taken not to pinch too late before the period the plants are required to bloom. We never stop later than August to have good spikes in November, at which time they are seen to advantage mixed with yellow and white *Chrysanthemums*. Being gross feeders a plentiful supply of liquid manure should be given when the pots are filled with roots.

W. H. GREEN.

Primula capitata.

By MURRAY HORNIBROOK, Knapton, Abbeyleix.

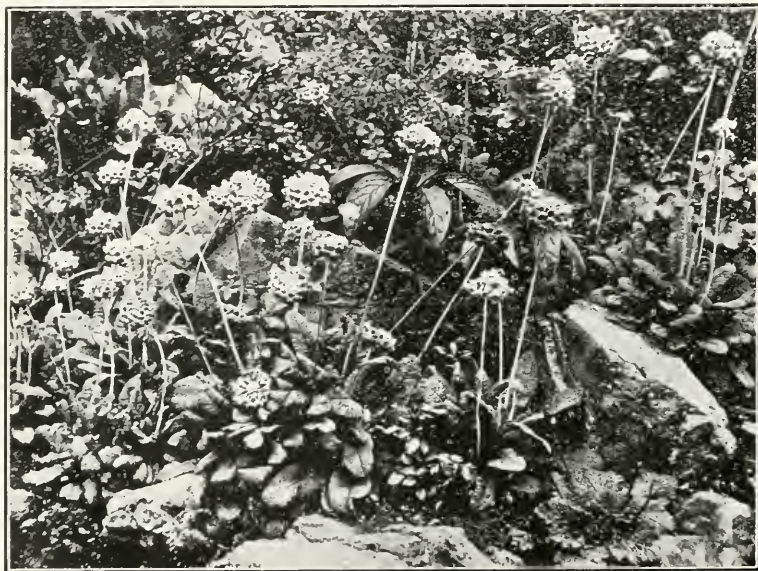
OF the Primulas of Himalayan origin that I grow, *P. capitata* has, on the whole, proved the most satisfactory. It not only blooms profusely but continues in flower for an exceptionally long period. It is usually termed a summer bloomer, but I have had plants in flower last season from spring until mid-October, when an isolated frost cut them off. The accompanying photograph

was taken in the last week of September. *P. capitata* is most distinct, throwing up well above its rosette of leaves erect, powder-white stems surmounted by globular heads of flowers which, in its best form, are of a most wonderful violet-blue, deep and pure in tone. Its one drawback is the biennial habit it acquires, under certain conditions, and to avoid these conditions is the aim of the cultivator. My own experience is

that it is capricious—how capricious one may realise when one endeavours to reconcile the diverse instructions given to us by authorities. Some tell us to grow it "with its feet in water;" others, "in well drained light soil on a sloping bank;" others again, in peat and shade; and I have been told as an "infallible" method of maintaining their perennial character, to cut off all the flower stems before seed is set, and to divide and replant immediately the blooming season is past. I have tried all these methods, and my experience is that in identical situations some plants will die off and others survive, increasing in strength and size, the proportion of survivors varying in different situations and soils. My own experience is that with this *Primula* everyone must buy his own experience, experimenting with plants in various soils and situations until the ideal for that particular garden be found. As far as my garden is concerned, the "feet in water" theory is invariably fatal, the plants resent the winter paddling like any sensible human beings, and if they get it promptly die. On the other hand, those in light soil on sloping banks are liable to go off suddenly, especially in dry spells, and my successes have always been in level spots in sandy loam, peat and leaf-mould, cool at the roots, but never wet, and receiving

quite a fair share of sunshine. In such a position are they shown in the photograph, growing in a bed about twelve feet long at the foot of rock work. Here they grow and flourish, and I neither cut off the flower stems or divide the plants, but I grow each year seedlings to replace those that unaccountably die off. Last season I lost very few, and the majority of the plants in the photograph are two or three years old. I find as a rule that a plant which survives its seedling period may be expected to survive the winter, and will be even stronger the following season. One has, however, to examine the plants from time to time, especially after heavy rains, for sometimes these cause practically the whole of

the roots to come away from the crown, which one finds some day tottering drunkenly on its side, but if the crown is at once planted firmly it usually makes fresh roots again by the spring. I do not know where the original stock came from, but I have received variations, both in colour and size, from time to time. The form I have retained is very vigorous, and has exceptionally deep coloured flowers, which



PRIMULA CAPITATA

do not lose their colour in the sun. I have never tried it in full southern exposures, but shall do so next season; it comes so freely from seed one can afford to experiment with it.



SEDUM SPECTABILE.

MANY of the Sedums or Stonecrops, as they are commonly called, make excellent subjects for the rock garden, but at least one species (*S. spectabile*) is worthy of a place in the herbaceous border. This Japanese species is a vigorous grower, usually attaining a height of from 1½ to 2 feet. The flowers are produced in September, and are about half an inch in diameter. They are usually pink, but the exact shade varies considerably in different plants. Being borne in cymes on the tops of the stems they are very conspicuous. The best variety for the border is that known as *atro-purpureum*, which bears flowers of a beautiful ruby red. *Sedum spectabile* is not infrequently grown as a window plant, and is quite amenable to pot culture.

S. R.

The Month's Work.

The Flower Garden.

By JOHN WHYTOCK, Gardener to Colonel Crawford, Crawfordsburn, Co. Down.



JANUARY having been most unfavourable as regards weather, owing to the heavy rainfall, outdoor work will, to a great extent, have been abandoned, so that, as stated in last month's calendar, when soil and weather conditions are favourable all outdoor alterations that have still to be done should be attended to as rapidly as possible.

FLOWER BEDS.—Any beds or borders which do not contain spring flowering plants and which are used for summer bedding should be deeply trenched, if not already done, and if the soil is in poor heart it should be given a good dressing of well-rotted manure, working it well down in the bottom of the trench; but if the soil is inclined to be on the rich side use little or no manure, but instead a dressing of well rotted leaf soil if procurable, for when the soil is too rich there is a tendency of the plants growing too much to leaf and the curtailing of flower. All edgings of beds and grass walks should be gone over with the edging iron and trimmed up.

Such plants as Lobelia, Heliotrope, Ageratum, Verbena and Salvia patens, that have been kept over

from last year for stock, should be placed in heat to encourage growth for cuttings.

ANNUALS, such as Ricinus, Cineraria maritima, Gaillardias and Dianthus Heddevegii should be sown in pans and placed in a genial temperature to germinate, as they take a long season for growth.

VIOLETS in frames and outdoors should be gone over and all decayed and damp leaves, also runners, taken off and the plants given a slight dusting of artificial manure: this will help to prolong the flowering season and strengthen the crowns for transplanting later on.

LILY OF THE VALLEY.—Any old beds that are getting exhausted should be lifted and the ground deeply dug and manured, transplanting only the strongest crowns singly about 1 inches apart in lines a foot apart. It pays to make a new plantation or two every year.

SUMMER FLOWERING CHRYSANTHEMUMS.—Cuttings of these should be taken now, and inserted in boxes of light sandy soil: they strike readily in a cold frame. Also towards the end of the month bulbs of Gladiolus, Childsii and gandavensis may be planted out in the borders, or prepared beds, as the case may be.

TREES AND SHRUBS.—Any planting still to be done of deciduous trees and shrubs should be carried out as soon as possible; evergreens are better left till the end of March or April.

ROSES.—Towards the end of the month those climbing Roses, such as Rêve d'Or, Wm. Allen Richardson, Climbing Mrs. W. J. Grant, Gloire de Dijon, which have a south aspect, can be gone over and pruned, taking out old and very weak

growth, selecting only those young growths which are ripened well to be laid or tied in.

Owing to the unusual mild winter a good many subjects are in flower earlier than usual this year in the rock and flower garden: here I notice Rhododendron præcox, with its bright, rosy lilac flowers, also R. Cunninghami, Azara microphylla, which flowers on the under side of the small dark glossy leaves and has a fine aromatic perfume: Andromeda floribunda (Lily of the Valley Tree), Erica hybrida, Daphne Mezereum and its variety alba: also D. Laureola var. Philippii, an evergreen dwarf bush, which throws out a sweet scent in the early morning and evening: Berberis japonica, a very handsome bush, with its large glaucous leaves and fine heads of yellow flowers. The Witch Hazels (Hamamelis) are also now in flower with their chocolate and yellow flowers. In the grass a good many bulbs are now in flower, amongst them are the Winter Aconite, Scillas, Snowdrops, and the violet-flowered Crocus Imperati.

The Fruit Garden.

By D. McINTOSH, Gardener to Alderman Bewley, Danum, Rathgar.

EARLY VINES.—If every necessary attention has been given the bunches when in flower, a good set will be the deserving reward. Now, endeavour to maintain a moist atmospheric night temperature of 60°, and throughout the day take full advantage of the sun's influence on every favourable occasion. Syringe the walls, borders and paths before 8 a.m. with lukewarm water. Admit a little air from the top when the thermometer reaches 72°, but at all times avoid a cold draught coming in contact with the tender foliage. Shut up the house early in the afternoons, damping down well before doing so. All laterals should have their points pinched out above the first leaf. If the borders are in need of moisture, give a good watering with warm water, and repeat this operation in a week or ten days, but this time give liquid manure immediately after. The bunches should be ready for thinning about the end of the month. It is wise to commence early with this operation, as the berries soon become crowded and make the work of thinning doubly tedious. The bunches must not be touched with the hands when thinning the berries. A thin, forked stick about 8 inches long should be used to hold the bunch and turn it about while being thinned. The art of thinning is to leave the berries room enough to swell without being squeezed together tightly, yet thick enough to hold the bunch in its natural position when cut and laid on the table.

OUTDOOR PEACHES AND NECTARINES.—The pruning of these trees should be done during this month. Commence by cutting out all dead and badly ripened wood. Afterwards, look carefully over as to the balance of the tree and thin out the undesirable branches and shoots that would seem too thick if retained. Leave four to six inches between each shoot, so that when tied in position there will be plenty of space to sling in the young wood of the current year. It is impossible to obtain a good crop of fruit unless the wood is well ripened and the fruit-buds fully matured. When the pruning is completed apply to the trees a dressing of Gishurst compound, diluted according to directions. This will very largely do away with insect pests during the period of growth.

CORDON FRUIT TREES.—This method of training is suitable alike for apples, pears, plums, or cherries, and is decidedly before all other systems for producing the largest fruit of the finest quality. The whole strength of the tree is thrown into the fruit, and as all the fruit is on the main stem, it draws the sap direct from the roots. By this means the greatest weight of fruit can be produced in a given space, and each fruit, being well exposed to the sun and air, develops the colour and flavour to perfection. To cover walls the trees should be planted eighteen inches to two feet apart. The training must be done according to height and position of wall. If the wall is over twelve feet high the cordons may be trained upright, but if lower, it is better to train them obliquely to an angle of 40° to 50° , or even a greater slope if the wall is low.

FRUIT TREES IN POTS.—Assuming that some of the earliest peaches and nectarines are required to ripen their fruits in June and July, it will be necessary to have them brought into the orchard house at once. Before doing so give the trees what little pruning they may require, such as cutting clean away any wood that has decayed during the winter, also other shoots that are badly placed and upsetting the balance of the tree. Wash the pots, and, most important of all, see that the drainage is thoroughly clear. Stand the pots in position in the orchard house and endeavour to maintain a buoyant atmosphere until the fruits are well set. The buds will quickly respond to this removal inside and will therefore soon come into flower. When the blossoms are fully expanded fertilize the blooms about mid-day by means of a rabbit's tail. As few bees are on the wing so early in the year the above operation is very important to ensure a good set. The pruning of all other pot fruit trees should be performed about the middle of this month and those within the near approach of flowering may be brought indoors.

STRAWBERRIES IN POTS.—To achieve success with the strawberry for forcing purposes it is essential that strong, well-ripened plants be prepared. If a batch has not already been introduced to the forcing house, this may be done the first week of this month. Pick off all dead and decaying leaves and freshen the surface soil in the pots by means of a blunt-pointed label. The plants are best stood on shelves near to the roof-glass, where a night temperature of 18° to commence with is maintained. This degree of heat should be increased another 5° in about a fortnight, thus gradually inuring the plants to warmer conditions. From the time the plants are brought into the forcing house, syringing morning and afternoon must be enforced around the pots and on the under sides of the leaves. Red spider will sometimes make its appearance, but if due attention is given to syringing, and a moist atmosphere prevails until the flowering stage, there need be little fear of that troublesome pest.

The Vegetable Garden.

By J. G. TONER, County Instructor in Horticulture, Co. Monaghan.

PARSNIPS.—If an opportunity occurs during this month to get seeds sown, by all means take advantage of it. They are usually slow in germinating, but as they are very hardy a beginning may be made in good time, and

besides a long season of growth is required. Nine inches apart is about the minimum distance at which fair roots can be grown: as a rule, however, one foot would be better if the space could be given. Anyhow, allow all possible room, for undersized parsnips are of little use. It will not be necessary to sow a continuous line of seeds, rather should four or five be put in one inch deep at the selected distance apart. An absence of freshly-introduced manure is desirable, and the soil cannot be too well or deeply worked. Sometimes holes are made with a crowbar six or nine inches wide at the top. The lower portion is filled with a rich soil, decayed manure, and a little superphosphate soil of the same kind minus the manure, but containing a little soot, completes the filling. On this a few seeds are sown, and the plants later thinned to one. Very fine specimens usually result.

ONIONS.—Where difficulty is found in cultivating onions from seeds, bulbs of the potato onion should be planted. Their culture is much easier, though the weight of crop is not to be compared with that given by seeds. Those grown from the latter most people consider much tenderer, besides being milder in flavour. Anyhow, this month is the best time for planting sets of potato onions. The bulbs are covered to just half their depth and placed about nine inches apart. Dung of ordinary richness will be required at the rate of about three hundredweights to the perch; this would have been much better done in the autumn. A fine artificial mixture would be $1\frac{1}{2}$ lbs. superphosphate, $1\frac{1}{2}$ lbs. nitrate of soda, 1 lb. kainit, and 3 lbs. common salt, half to be applied a fortnight or so before sowing, and the remainder when a couple inches of growth is seen.

TRIPOLI OR AUTUMN ONIONS.—Plants of these may be set out at any time when the ground is in good order, the ground being manured as advised for potato onions. If none were sown last autumn they can be purchased now at about one shilling per hundred. They will give a fine return.

BROAD BEANS.—There are many kinds of these that are coarse and devoid of flavour: this is not the case with many of the Windsor type. They almost rival peas in the colour and delicacy. A row should therefore be sown during the month. The vicissitudes of the weather will have little effect on them, and the crop will turn in at a time when it is sure to be appreciated. Firm soil that has been well treated suits them perfectly. A double row of seeds may be placed in a trench at least three inches deep, placing them alternately nine inches apart. A most useful and easily-managed vegetable.

PARSLEY.—Although plants originating from a June sowing give better results, this is so constantly in demand that a shortage would be found inconvenient, therefore a row might be sown towards the end of the month. Few gardeners, at least amateurs, think of the necessity for thinning parsley, yet it is one of the most important details if fine leaves are expected, as they often are required for the decoration of dishes, &c. A continuous thinning may be carried on until the plants stand at nine inches apart. Besides the mossy-curl variety there is also a pretty kind known as the fern-leaved parsley, which is often given the preference on account of the pretty formation of the leaves. Good use is made of it too as a pot plant—an exceedingly graceful one it makes.

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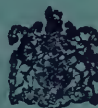
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5 " 6 "	10/-	85/-	12 " 18 "	8/6	75/-	3 " 4 "	10/-	75/-
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2 to 3 ft.	4/-	32/6	1½ to 2 ft.	5/-	35/-	12 to 15 ins.	1/6	12/6
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BEECH			3 " 4 "	10/-	75/-	18 " 24 "	2/6	20/-
1½ to 2 ft.	7/-	60/-	SCOTCH FIR			24 " 30 "	3/-	25/-
2 " 3 "	8/6	75/-	9 to 12 ins.	3/-	20/-	30 " 40 "	5/6	45/-
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CHESTNUT, Horse			SILVER FIR			12 to 18 ins.	35/-	6/-
1½ to 2 ft.	5/-	40/-	6 to 9 ins.	4/-	30/-	18 " 24 "	50/-	9/-
2 " 3 "	6/-	50/-	9 " 12 "	5/-	40/-	24 " 30 "	75/-	18/-
3 " 4 "	7/6	60/-	12 " 18 "	6/-	50/-	RHODODENDRONS		
DOUGLAS FIR			SYCAMORE			6 to 9 ins.	15/-	—
6 to 9 ins.	5/-	40/-	1½ to 2 ft.	8/-	25/-	9 " 12 "	20/-	—
9 " 12 "	7/6	60/-	2 " 3 "	4/-	35/-	12 " 18 "	30/-	—
12 " 18 "	10/8	95/-	3 " 4 "	5/-	45/-	ROSES, any variety,		
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4 " 5 "	7/6	60/-	18 " 24 "	7/-	55/-	CLEMATIS & AMPELOPSIS		
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Irish Gardening

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Department of Agriculture and Technical Instruction for Ireland.

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Rose Pruning.

By T. F. CROZIER, Avonmore, Stillorgan, Co. Dublin.



WITH the exception of the actual planting of the Rose Tree, pruning is, without doubt, the most important work that has to be carried out in the Rose garden throughout the entire year. Not only is it the most important, but it is also the most difficult. Pruning is an art. Hard and fast rules may, and are, usually laid down, but every individual plant must be studied, and considerable thought given before ever you touch it. Pruning is the art of improving the productive power and the appearance of the Rose plant, and consists of two distinct operations—(1) the removal of all dead and unripe wood and useless twiggy growth; (2) the shortening back of those growths which will be allowed to remain, and which will provide the blooms for the coming season.

I propose to touch lightly on three heads in this article:—

- (1) The time to prune.
- (2) The implements to use.
- (3) The manner in which the various varieties of Roses should be pruned.

As to No. 1, the Hybrid Perpetuals and Hybrid Teas should be pruned about the end of March, but one must be guided by the seasons. Personally, I prefer late to early pruning. In past years, late frosts at the end of April and in May have become very prevalent, and if you prune most of your Roses about the middle of March it is heart-breaking to find the long shoots being destroyed by these late frosts. I

generally prune my Hybrid Perpetuals and Hybrid Teas the very last week in March, unless it has been an abnormally open and mild season. The Teas are better left alone till the first, or even the second, week in April.

Climbing Roses, such as the Multiflora and Wichuriana varieties, should have been pruned after flowering last September, and in January or February they should have been gone over again and dead shoots cut off and generally trimmed.

As to No. 2—namely, the implements to use. Personally, I would advise all amateurs—for I am not directing these remarks to experts and exhibitors—to use both the knife and the secateur.

The secateurs have their own advantages, the work can be done more quickly, less damage is done to your hands, and dead shoots and thick ones can be much more easily cut through. It is easier also to work in the centre of a bush with a long-handled secateur than a knife. I should therefore advise the amateur to thin out all dead wood with the secateur, and any very thick heavy shoots that have to be pruned I would prefer to use the secateur or a short pruning saw. I would then keep the knife for the outside shoots, which are to provide the season's blooms. But, whichever instrument is used, be careful to see that it is sharp, and kept so. A kneeling pad and thick dog-skin gloves will complete the pruner's outfit.

As to No. 3—the actual pruning—I shall make first a few general remarks, then briefly touch on the pruning of the varieties of Roses that are chiefly grown.

First and foremost, I strongly recommend everybody, be he exhibitor or not, to go in for hard pruning. This direction is subject to

modification when we come to deal with some such varieties as Hugh Dickson, Frau Karl Druschki, Caroline Testout, &c., which are better let "run" a bit. All Roses, the first year they are planted, must be cut down hard to the ground. With Rambler Roses you must harden your heart and cut within a foot of the ground these long shoots as sent out by the nurserymen, and from this class of Rose, though it is hard to put up with it, you need not expect any bloom the first year. You will, however, be rewarded next year for your apparent harsh treatment. If you do not cut down these long shoots, your Rambler will never recover, will never be healthy. The reason, of course, is obvious—the roots have not got sufficient hold of the ground to sustain these long shoots the first year, and in addition carry blossoms on them. Dwarf Roses must be similarly treated, but you will get a certain amount of bloom off them the first year, but you must not expect very great results till the second year.

I will now assume that the reader, towards the end of next month, ventures out into his Rose garden to commence this delicate operation of pruning. Many matters have to be decided before you actually commence work. You have got to prune for shape, probably for space, certainly to improve the quality of your flowers, to encourage growth, and to renew and prolong the life of your Rose tree. Then you must ascertain the variety. If it is a strong grower it must not be pruned too hard; if you do you will get even stronger growth the coming year and little flower. If a weak grower, then, as a rule, that Rose must be pruned severely. Having therefore made up your mind exactly how you are going to treat the individual Rose tree in front of you, commence by cutting out all the dead wood right back, and all the unripe sappy growth and small useless twigs. You will then decide how many of the remaining ripened healthy shoots you want to keep. If for exhibition probably only two or three, but if for garden and decorative purposes, retain as many as you think the plant can sustain, so long as they do not cross one another, that you are able to cut to an outside dormant bud, and that the centre of your plant is kept open. Cut back to within four to six eyes from the base from whence the shoot starts, but the actual number of eyes that you leave on the shoot is regulated very much from the outside bud. You may get a promising outside bud only three eyes from the base, or it may be six. But never cut to an inside bud. Also, do not cut all your shoots the same length. Personally, when I have finished my pruning, especially the plants in their second year, I tie out each shoot to stout stakes driven into the ground all round the bush. This

will lay the foundation for a fine, well-spread Rose tree eventually, and I strongly recommend this practice, even though it is somewhat troublesome. By the end of June the shoots can be let go and the stakes taken up, and the tree will retain its shape.

The most frequent errors, I think, that the amateur commits are leaving too many shoots on his plant when thinning out; pruning too severely the shoots of varieties which require little, if any, shortening; pruning varieties lightly which really require severe pruning, and leaving their Rose plants crowded with shoots and cutting these to a uniform length, like a clipped hedge.

Now, as to the different varieties, I really need not say much as to the pruning of Hybrid Perpetuals. One has only to walk into the nurseries of the leading Rose growers and see how few are grown by them. The demand nowadays, and rightly so, is all for Hybrid Teas and Teas, still there are some Hybrid Perpetuals that we cannot do without, such as Frau Karl Druschki, Gloire de Chedane Guinoisseau, Hugh Dickson, Mrs. John Laing, Captain Hayward, &c. Personally, out of nearly 3,000 Roses I do not think I have more than 40 or 50 Hybrid Perpetuals.

Some rosarians prefer to prune their Hybrid Perpetuals early in March, on the grounds that the plants suffer less from bleeding, and the buds which are left to develop, being in a very backward condition, are not suddenly forced into growth, and that better shaped flowers result thereby. These early pruners also cut their Hybrid Perpetuals back very hard. Personally I do not recommend this, and I would advise Hybrid Perpetuals being pruned at the same time as the Hybrid Teas, and not quite so severely as this latter class, leaving from two to six inches of old wood with from three to five buds on them. By this later pruning there is less risk of frost, and the roots being more active growth starts more quickly. Some of the varieties I have mentioned above I would prune very lightly indeed. At least one Hybrid Tea, Caroline Testout, should be treated the same way. What finer sight can you have than a Hugh Dickson climbing along a 4-ft. trellis, with its long rods trained like a Rambler along it, or a big tall bush of Frau Karl Druschki or Caroline Testout! Roses grown thus, of course, are essentially very strong growers, and beyond cutting out dead wood, little more is done with the knife than tipping back the long healthy shoots. Keep down, however, all twiggy growth.

We now come to the pruning of the Hybrid Teas. This is the most difficult class of all to treat, because we have such a diversity of growth

and habit amongst some of the choicest Hybrid Teas. You have the tall upright grower, like *Pharisäer*, the branchy bushes of *Caroline Testout*; again, we have Hybrid Teas like *Joseph Hill*, *Madame Abel Chatenay*, and *Madame Melanie Soupert*, these will persistently and perversely grow lob-sided, throwing up late in the summer a strong single shoot. These latter are very difficult varieties to know how to prune. Then we have those glorious single varieties, *Irish Elegance*, *Irish Flame*, *Simplicity*, &c., and yet another the strong growing exhibition Rose, such as *Bessie Brown*. Then we have the branching and untidy habit of the *Lyon Rose*, and perhaps, lastly, we have the *Mildred Grant* and *Lady Helen Vincent* type of short, stumpy, almost twiggy growth. All these various Roses, and there are many others like them which I have not mentioned, will require separate treatment. No one would dream of pruning a *Caroline Testout* and *Lady Helen Vincent* the same way, but when we come to think of it it only requires a little common sense and thought.

With the *Lady Helen Vincent* type I would recommend taking out first the dead wood, of which, unfortunately, there is often a considerable amount, and cut the live stems very nearly to the ground. Two or three buds will be ample to leave. Do not spare the knife with Hybrid Teas of this type. When you come to prune Hybrid Teas of the less spreading type, like the *Lyons*, opinions differ. Some recommend hard pruning, others light pruning. I think that the position that these Roses are planted in will largely decide the kind of pruning we should give them. If, as they should be, they are all grown together in one bed, then I would recommend tolerably light pruning.

Dealing with the single variety class, I think there are not anything like enough of this class grown. They should certainly be let grow into fair sized bushes. Do not on any account mix them up with their brothers and sisters. Keep them absolutely by themselves, and, if possible, in a more shady part of your Rose garden, and then the lovely coppers, pinks and scarlets will retain their colour better. I would recommend the pruning done to these being confined to the removal of unripened shoots and dead wood, together with a little shortening of the long summer growths. It must be remembered that this class of Rose gets pretty severe pruning and cutting all through the summer, as they are generally cut away for decorative purposes, in almost branches at a time. I had last year a bed of *Irish Elegance* which gave me three distinct successions of bloom.

We now come to the most difficult type of Hybrid Teas to prune, as mentioned already—

namely, the *Joseph Hill*, *Chatenay* and *Melanie Soupert* class. It is not usually till the autumn that this long rod with a pannicle of bloom is shot up by these varieties. What then is to be done with this when March comes round? Personally I always prune it the same as the side growths, as I do not like the pegging down system.

In the case of *Abel Chatenay* I would recommend your readers, even though I do not carry it out myself, to peg down these long growths, as, in addition to saving the greater part of this long rod and getting blooms off it, this treatment will induce growths from the base of the plant.

I am afraid, however, your readers will find it difficult to treat *Joseph Hill* this way, as the rods are quite too stiff and are very liable to break: however, they can be bent down to a considerable angle, and if one does not object to the rather untidy appearance of pegged down shoots, I would recommend this course to be adopted.

The tall upright growers like *Pharisäer* and the vigorous branching habit of *Caroline Testout* may be considered together. Their treatment will chiefly depend on the room available. If they are by themselves, and not mixed up with a lot of dwarf growers, then by all means let them "run" a bit.

I saw a splendid example of this at Messrs. *Hugh Dickson's* at Belmont, Belfast, last July. There I saw a very large round bed entirely filled with *Caroline Testout*, fully six feet high. Mr. Dickson told me he had cut many of his prize blooms off this bed, and that he did practically no pruning beyond keeping the centre of the bushes fairly clear, cutting out dead and unripe wood, and tipping back the healthy growths. However, the ordinary Rose grower has not space like this to give up to such rapid growth, but for all that, do not prune *Caroline* and her kind too hard.

We now come to the Tea Roses, which should not be pruned till April. This class is what we may call the excitable one. The true Tea Rose remains in bloom longer than any other variety. I say true, because I think even some of our leading growers admit that we have now Roses classed as Teas which are much more like Hybrid Teas—take, for instance, *Molly Sharman Crawford*, *Freiherr von Marschall* and *Harry Kirk*. I cannot help thinking that the classification of a great many of our Roses wants revising, and I have heard that question discussed with several of the leading amateurs and members of the trade. Let us hope therefore that at no distant date this will be taken in hand. However, this hardly comes within the scope of my present article. As I said, the Teas are

extremely excitable, and, therefore, amateurs need not be afraid of cutting right back, even into the old wood, if they find shoots damaged by the frost. In regard to the true Tea Rose of the spreading branching habit like Marie Van Houtte, after the removal of weak and sappy growths and dead wood, I would recommend rather light pruning for this type, and try and keep a well balanced bush.

I would also extend the same class of treatment to the Cochet class of Tea. This class, as is well known, throws up strong shoots from the base late in the previous summer. The only precaution necessary is to examine these shoots very carefully, and if they are not well ripened, then do not spare the knife.

The Harry Kirk, Freiherr von Marschall and Molly Sharman Crawford type are a section that I would recommend being pruned more after the fashion of the Hybrid Teas, pruned moderately hard.

China Roses are very accommodating, and do fairly well with hard and light pruning. Personally, I think they are ruined by hard pruning, and the majority of them are such free growers it is much better to give them space and let them run. If treated this way they will begin to flower in May, and continue up to Xmas if the weather keeps mild.

The pruning of the Roses popularly known as the Ramblers, such as the Wichuriana, Multiflora, &c., I have already treated on. Whether they are grown as weeping Standards or let ramble over pergolas or dead trunks of trees, treat them all the same way.

There is one other class perhaps it would be as well to touch on which every Rose grower should find room for at least one large bed, and that is the dwarf Polyantha. Some of the varieties that are on the market now are quite gorgeous, though treated as I think they ought to be. I cannot say that they are of much use for cutting purposes.

I would recommend dwarf Polyanthas being pruned hard. I pruned a long bank of these last year very lightly, and they have certainly got very leggy and unsightly. I think they look best when kept to about one foot to eighteen inches high.

Remember, when you have finished your pruning, to collect and burn carefully all branches and cuttings. They are sure to contain a great many pests and fungoid disease. I would also recommend, immediately after pruning, the Rose beds being almost covered in soot. The first shower of rain will sufficiently cleanse the stems, and besides being an excellent manure, I have found it, especially if the treatment is carried on through the winter, quite a good preventive of mildew.

Cultural Hints on Growing Tuberous Begonias for Exhibition.

By P. FLANAGAN, Moyne Gardens, Durtow, Queen's County.

THE tubers should be started from February to April in a cool house near to the glass, so that the young growths which appear will be short jointed and hardy. When the shoots are about one inch long, pot the tubers into small pots, according to the size of each tuber, using a light compost consisting of two parts loam, one part leaf-mould, one part rotten manure with a little coarse silver sand and some crushed oyster shells.

Keep a nice moist atmosphere in the house, and as soon as the roots reach the side of the pot and before they get pot-bound give the plants their final shift—this will be about May to the middle of June—using pots from seven, eight or nine inches in diameter. Pot the plants firmly, but be very careful not to use too large pots. The soil for this final shift should consist of equal parts loam, leaf-mould, rotten manure, peat and sufficient sand to keep it open. Plenty of crocks for drainage should be placed in the bottom of the pots, covering these with moss or fibre to prevent the drainage getting choked. Newly potted plants require careful watering until the roots have taken hold of the new soil.

From this time onwards the plants should be ventilated freely, avoiding strong draughts. When the pots are filled with roots they should get an occasional watering with diluted liquid sheep or cow manure.

The atmosphere of the Begonia house should be kept moist by damping the stages and floors, and the plants should be watered over the leaves with a fine rose on bright mornings until they begin to bloom. The house should be shaded lightly, only just enough to prevent the plants being scorched.

As the plants cease flowering, water should be given sparingly and withheld after the stems have fallen off. The tubers should be allowed to rest from the end of October to February.

The safest way to keep tubers is to shake the soil from them and then store in pots of sand on a shelf in a dry house or under a greenhouse stage.

I attribute my continual success at the Royal Horticultural Society and other shows to the fact that I rely upon young plants from one to three years old to produce exhibition flowers.

Some Good Herbaceous Plants.

ACONITUM WILSONI, introduced some years ago from China, is a very handsome Monkshood. It begins to flower towards the end of August and continues well into September. The flowers, which are pale violet blue in colour, are very welcome at a season when there is often a superabundance of yellow flowers. When well grown it will reach close on six feet in height.

Aster Amellus varieties are now very popular with growers of hardy herbaceous plants, and some of the more recent forms rank among the best of autumn flowers.

Aster Amellus Beauté Parfaite is a charming variety producing abundance of deep violet flowers with yellow centres, which only serve to enhance the beauty of the ray florets.

A. Amellus Fleuve Bleu produces large handsome flowers of clear lavender blue, and is by many who have seen a mass in flower considered the best of its class.

Aster Amellus preziosa also bears large flowers, but of a deep blue shade, very effective in the mass.

A. Amellus roseus majus is a very lovely rosy pink form well worth growing in clumps for its colour, which is wonderfully effective in autumn.

All the *Asters* of the *Amellus* section are useful garden plants, being good alike for border and for cutting.

Among tall late flowering *Asters*, two varieties of outstanding merit are *Beauty of Colwal* and *Climax*. The former is unique in being the first double *Michaelmas Daisy*, and bears profusely flowers of a charming shade of lavender blue, while the latter bears very large single, clear blue flowers on long shoots. Both varieties will reach five feet in height with decent cultivation, and form striking objects in the autumn border.

Delphinium Capri is one of the most beautiful of the newer varieties, and it is no easy matter to pick out the best now that there is such a multitude of handsome varieties to choose from. The plant under notice is a good grower, producing branching stems which are furnished in season with lovely sky blue flowers, most effective in the herbaceous border.

Delphinium Moerheimi has the distinction of being the best white tall growing variety at present in general cultivation. It is still quite new, free flowering, and will certainly be largely planted in a few years when better known.

For those who like dwarfier varieties of continuous flowering nature what is often called the *Belladonna* set can be highly recommended. It comprises such varieties as *Belladonna*, sky blue; *Belladonna semi plena*, sky blue, with a faint trace of rosy colour in the centre; *Mrs. J. S. Brunton*, sky blue, with a

white eye; and *Mrs. Thompson*, which is rather taller, but has lovely pale blue flowers with brown centres.

Gem "Mrs. Bradshaw" is a first rate plant for massing in the front of the border. The flowers are large, freely produced, and being of a rich crimson colour are very effective. Although comparatively new it is now cheap enough to be within reach of all hardy flower lovers.

Helianthus "Miss Willmott" is by many considered the best of the perennial Sunflowers. The flower heads are borne on long straight stalks, and are of good size without having too much centre, which is a failing with some of the species. It is a highly effective border plant and one of the best for cutting.

Helenium "Gartensonne" is a new variety of the old autumn flowering "*Sneeze-weed*." The handsome flowers are a fine clear yellow colour, larger than those of the old variety, making this a very effective border plant.

Helenium Riverton Beauty, another new "*Sneeze-weed*," has yellow flower heads, the outer florets suffused with brown. It forms a good group, the suffusion of brown adding warmth to the yellow.

Helenium Riverton Gem—like the last, an American introduction—is perhaps the most effective of the lot. It is a sturdy grower, producing fine flowers which ultimately become reddish bronze—a colour the value of which is only thoroughly realised by those who have to maintain an effective display of herbaceous plants throughout as long a season as possible.

Lupinus "Moerheimi" is an improved form of *L. polyphyllus roseus* and a most effective early summer flower. The flowers, which are produced in dense spikes, are rosy pink, and remain in beauty for a considerable time.

Potentilla "Gibson's Scarlet", for the front of the border or for the rock garden, will certainly rank among the most brilliant of summer flowers. Though of prostrate habit the flowers are so freely produced as to create quite an effect at a considerable distance. The colour is rich scarlet.

Pyrethrum "Queen Mary", which has very justly received an award of merit, is one of the best varieties at present in cultivation. It is a double variety bearing beautiful large rose-coloured flowers, effective in the border and splendid for cutting.

Rudbeckia "Herbstsonne", a very fine new variety of the "*Cone-flower*," will soon prove indispensable for the hardy flower border. Reaching a height of six feet when well grown, it forms a very effective mass towards the back of the border. The flowers are large, of a clear yellow colour.

Scabiosa caucasica perfecta is not a new plant now, but has so many good qualities that it should find a place in all collections of hardy herbaceous plants. Of compact habit, reaching a height of about two feet when in flower, a group of plants is very effective. The flowers are of a pretty pale lilac colour and are produced throughout the summer and autumn, and are first rate for cutting.

Thalictrum Delavayii, a "Meadow Rue" from China, has found many admirers since its introduction some years ago. It is of comparatively dwarf habit, the leaves rather glaucous and finely divided, surmounted in summer by panicles of rosy lilac flowers. This is a good plant for a choice part of the border, or an effective group may be formed on the lower slopes of the rock garden.

Thalictrum dipetocarpum, also from China, is a taller grower, reaching five feet when doing well. It likes a fairly retentive soil and an open position, where it will prove effective. The flowers are rosy purple, with a central tuft of yellow anthers.

Verbascum "Caledonia" is only one of a series of hybrid "Mulleins" which have appeared in recent years to add beauty to the hardy flower garden. It bears tall spikes of bronzy yellow flowers over a considerable period, and may be recommended as an effective border plant.

Verbascum Lewanika is a striking hybrid which originated in Ireland. It grows only about two feet high, but blooms very continuously all summer. The colour of the flowers is perhaps unique, being a combination of purple and bronze.

To those who still have some planting to finish the above brief notes may prove useful in directing attention to only a few of the many

fine hardy plants now available. Most of those noted may still be planted and would give a fair account of themselves the first season. Very soon, however, growth will be too far advanced for moving the plants, so if planting is contemplated this spring it should be done at once.—J. W. B.

Ribes laurifolium.

This distinct shrub is a hardy evergreen, and was raised from seed collected in China by Mr. E. H. Wilson. It differs from other flowering currants

in cultivation by having male and female flowers on separate plants, and strange to say nearly all the plants that have flowered have been female.

The Hon. Vicary Gibbs showed female plants on 20th February, 1912, at the London R. H. S. meeting, when an award of merit was granted, but the female plants are not very bright or cheery in flower. The female flowers are nearly half an inch across a pale greenish-yellow, with green centre, borne in short racemes about two inches long; bracts almost three-quarters of an inch long subtend the flowers, and are the same colour.

The male plant which flowered in February at Glasnevin Botanic Gardens, and is shown in the illustration, gives greater promise as a garden shrub than the female, unless the female proves to have decorative



RIBES LAURIFOLIUM (MALE).

A new Flowering Currant with pale yellow flowers.

fruit, which remains to be seen.

The flowers of the male plant are borne in greater numbers, about twenty to each raceme, and the racemes spring from crimson scale leaves. Although there are stigmas present in the flowers, yet the ovaries are missing.

The leaves are an oval shape, tapering to a sharp point, with serrated margins from 2 to 3½ inches long and about half as broad; the upper surface is a deep green, and often reddish beneath. In spring the young shoots are covered with crimson hairs. The shrub flowers when quite young, the spray shown in the illustration being from a specimen only about a foot high. It is found in a wild state on rocks at an altitude of 7,000 feet in W Szechuan.

Raising Daffodils from Seed.

By C. DOUGLAS, Foxbrook, Castlericard, Moy-valley.

MANY amateur Daffodil enthusiasts are now annually raising hosts of hybrids of the *Narcissi* family, and for the benefit of some of our Irish friends, who have not as yet tried their hands at this very interesting hobby, I shall describe, as best I can, how the operation is performed, in the hope that some may be tempted to join our growing army.

The operation is very simple, and the only objection is the very long wait the raiser has before him till the result of his labour can be seen.

Any one who examines the structure of the bloom of a Daffodil, no matter to what class it belongs, will see a long slender style; the enlargement on the end is called the stigma, and surrounding it are six stamens at the ends of which are the anthers, covered with a whitish dust called pollen. The whole operation of cross-fertilisation consists in taking the dust or pollen from the anthers of one flower with a camel's hair brush and applying it to the stigma of another, when it is in what is called a receptive condition—that is, if you look at the stigma through a strong lens you will see at one time it exudes a sort of gum or sticky stuff; this gum holds the pollen, so that it is not blown off by the wind.

Of course, when crossing flowers, it is necessary to remove the anthers of the seed-bearing plant before the pollen is ripe; this is easily done with small medical forceps, and with a steady hand there is no danger of any pollen falling on the stigma and so causing self-fertilisation. The time at which flowers should be deathered varies in each class of *Narcissi*. The Poet's *Narcissus* must be opened practically when they are just showing colour, and the Trumpet Daffodil when the perianth is just unfolding from the tube, and the others in intermediate stages.

The proper time to cross-fertilise is from 10 to 3 o'clock on fair days. The outfit for the job is not large, and consists of a small pointed forceps, some camel-hair pencils, glass lid specimen boxes, and some small tubes. You then take some pollen from a flower with a brush (it will stick if you just damp the brush in your mouth before brushing the anthers) and apply same to the stigma of the proposed seed-bearing flower, which should be first deathered, and if you wish to use the pollen of this bloom, if the variety is scarce with you, it can be stored for use in one of the glass lid boxes, which should be carefully named. I have found the pollen to keep good for ten to fourteen days in the box, while some I had put up in specimen tubes heated inside a few days, and was then useless.

When a bloom has been operated on, have it securely staked and labelled with a note of the cross effected, as if not staked you may, some fine morning, see a green pod with a broken stem; then good-bye to a possible King Alfred!

Some care must be taken with the brushes to keep them clear, and if possible only use one brush for each kind of pollen. When crossing with some potent pollen, as, say, King Alfred or Triandrus, if any was to remain on the brush, when you wish to apply some other pollen you may find that the potent pollen, of which only a few grains had remained, had taken to your bloom, and at the end of seven years, in the case of King Alfred, you will see the result of a careless trans-

action. I keep specimen tubes for my brushes, the handles of which I pass through corks, and use separate ones for King Alfred, *N. triandrus*, *calathinus* and a few others.

Careful watch should be kept on the labelled blooms, as the pods swell and ripen, to see when they begin to turn yellow; then remove each, as if left to ripen more there is great danger of the seed shedding; there are some which should be pulled before they turn yellow. Often, when I think the seed is nearly ripe, I make a small opening in the base of the pod with a penknife, and if the seed disclosed is black and shining it is fit for removal. I keep a number of small glass pomade jars and put each distinct cross labelled by itself. Of course if a number of the same kind of Daffodil are crossed with pollen of another kind, all the same cross-pods are put in the one receptacle. I found the seed of a lot ripened with me by the end of May although some crossed by Horace did not ripen for three weeks later.

Having harvested your seed, the sooner it is sown the better. Sow it in boxes 12" x 18" by 6" deep in lines carefully tallied, and note in a book. Use very turfy loam, with plenty of sharp sand and a fair dash of bone-meal, with plenty of drainage. The boxes must be substantial, as the plants have to remain in them at least two years. Having sown the seed, place them in a cold frame or in some sheltered position safe from frost, and wait for the beginning of December, when you will see some grass-like foliage pushing through the soil; now look out for slugs and snails, or a lot of damage will be done to the tiny seedlings. I dust mine with soot fairly often, and cannot complain of any damage. Keep the plants growing, and on no account let them suffer from want of water or any other check, or their growth may be stunted and take some years to recover.

When the plants are large enough, which is generally at the end of the second season, they should be planted out in beds, carefully prepared, of some good loam, made light, add bone-meal—say 2 ounces to the square yard. I raise the beds with boards about 3" above the ground level, then keep them free from weeds and well hoed; a dusting of superphosphate now and then is a help, and if kept growing some forward youngster may bloom the third season; but it is often in its seventh year before it develops its true characteristics.

The first few years of waiting seem long, but if the hobby is persisted in each year, after the first wait of, say, four or five years, there will be some few flowers to show themselves, and so keep one's courage up. A novice or an outsider can hardly understand or believe how fascinating a hobby this is, and how one rushes out in the early morning of the blooming season to see if any new creation has opened out during the night. I cannot say whether it is the excitement or the fresh air, but anyway you will have a good appetite for ham and eggs afterwards.

As to varieties to cross and some practical hints, if possible get some of the *Triandrus* bulbs; these are delicate, and require special treatment to succeed with, but their pollen is very potent, and also their cross-seedlings bloom in their third year, and crossed with Madame de Graaff or Minnie Hume, some lovely fuchsia-like blooms may be expected. These are exquisite for table decoration.

Now as to what one may expect—

If Minnie Hume is crossed with the pollen of, say, Madame de Graaff, a Giant Leedsii is produced like White Queen.

From Princess Mary, crossed with pollen of the Poets, we have the new race called Engleheartii.

Madame de Graaff is the seed parent of Pearl of Kent crossed by Monarch, while her pollen crossed in Emperor gave that magnificent new white Florence Pearson.

Some varieties are sterile, others have good pollen, but refuse to bear seed, and *vice-versa*. Sir Watkin and both the Canms are useless, as is also Empress, although its almost *alter ego* Horsfieldii bears seed here fairly well. King Alfred is good either way, its colour predominates in most of its crosses.

The novice should grow plenty of Princess Mary, as it is a splendid seed bearer, and cross with the Poets, if he can get same to bloom in time, or get some blooms of Poets from his friends' greenhouses.

Some other free seeders of the popular varieties are Duke of Bedford, Lady Margaret Roseawen, Weardale Perfection, The Poets, Glory of Noordwijk, Emperor, all the Leedsii, &c. Potent pollen is found in Maximus, Weardale Perfection, Lilworth, and Emperor.

As a general rule the pollen parent gives colour and the seed parent the form, also pollen from a distance seems more fertile.

Our leading bulb-growers are very glad to give hints to any of their customers who may take up hybridising on asking for same, and I am quite sure our very courteous and painstaking editor will only be too happy to oblige any correspondent with very sound and clear advice, and also to help with pollen if the variety is within his reach; at least I have found him so, and take the opportunity of returning him my best thanks.

The Monarch of the East.

SEEDSMEN sometimes sell this plant as a curiosity, for in spring, when tubers are placed in a warm room, they will flower without any soil or water; large tubers often measure 4 or 5 inches in diameter. A native of India, it is botanically allied to the Arum Lily, in fact is sometimes sold as Arum cornutum, but its correct name is Sauromatum guttatum, which means that the flowers are spotted like a lizard.

The flower is more curious than beautiful, and the scent is not pleasant; the flower spathe is a foot and a half long, purplish-green outside, inside spotted and streaked heavily with red purple. The heat at the bottom of the spathe is considerable when the flowers are expanding. Handsome divided foliage will appear after the flower has faded; when this takes place the tubers may be potted up in rich soil and placed in a warm greenhouse. During the summer the old tuber rots away, but a new one is formed in its place. Towards the end of summer the foliage dies down, when the pots should be placed on their sides under a greenhouse stage and kept quite dry until next February, or the tubers may be shaken free of soil and stored in a box of dry sand. Small tubers detached when repotting in February if potted separately will flower in a few years.

Another way of growing the Monarch of the East is to plant the tubers outside on a warm border in March or April, and then they can either be lifted in autumn and stored in a dry frost-proof place, if required to flower inside, or they may be left in the ground and well covered with ashes for the winter. (Reply to S)

Olearia ramulosa.

IN our milder counties *Olearia stellulata* is one of our best flowering shrubs, for in the month of June it becomes a veritable mass of white so freely are the flowers produced; a common name sometimes applied to it is the Daisy bush, for the flowers are similar to Daisies. In catalogues it is often sold as *O. Gunnii*.

Like its better known relative, *Olearia ramulosa* comes from Australia and is widely spread in New South Wales, Victoria, and Tasmania. If we imagine a dainty miniature of *Olearia stellulata* with long spray-like branches we get some idea of the gracefulness of the plant. Unfortunately this plant is not hardy; it might be tried in our most southern and mildest districts, but around Dublin it will not stand the winter. Nevertheless this *Olearia* should be useful to those who want flowering plants for a cool greenhouse or conservatory. The flowers last for a long time, and are borne throughout the months of December, January, and into February. The flowers, about a third of an inch across, are produced on the lateral branches, while the tiny evergreen leaves are narrowly oval, barely a quarter of an inch long. Cuttings strike freely, especially if taken off with a heel: when rooted they can be potted up and grown on in a cool house; at the end of April they can be placed outside and brought into the house again before the autumn frosts. Old plants require cutting back after flowering to keep them bushy and compact.

The Making and Keeping of Lawns.

By W. USHER, Brennanstown Gardens, Cabinteely, Co. Dublin.

As the setting is to the diamond, so also, and more, are the surroundings to a dwelling, be it a palace or a cottage. What a very different appearance does a house take on when surrounded by nice green, well kept lawns, flanked by trees and shrubs judiciously planted and carefully attended to; but I cannot go into the woods or shrubberies; the editor has chained me to the lawn. To stroll about on the soft, smooth, green lawn on a fine day tends to excite the imagination; therefore, gentle reader, I will ask you to imagine that you are about to make a lawn, be it a tennis court, a croquet lawn, or a series of green expanses in which you are setting your house. The first matter to consider is the drainage; should the ground be sloping and the natural drainage good, a great deal of time, labour, and expense will be saved; but when it is likely to be under water for any considerable period, at any time of the year, or that the ground is heavy or too retentive, it will require draining; this may best be done by one (or more, according to the size of lawn) main drain, into which a number of smaller ones may be taken, so that the water be carried away quickly. The next important consideration is the levels, and how best to fit them in with the surroundings; soil may have to be imported or taken off the higher ground and placed on the lower portion, slopes or terraces may have to be formed, and retaining walls built (these latter should be avoided if at all possible). Heights and depths should be carefully taken and properly balanced before commencing to remove soil or importing it. To those of limited experience a

narrow section (of the lawn as it should be when finished) made across the centre will be of great assistance; it will be easy to work from, and mistakes will less likely occur. Should the lawn be sloping the total fall should be ascertained and graduated, so that when finished a proper falling level will be the result. When adjusting heights and depths it will not do to remove all the top soil to one end of the lawn, leaving nothing but poor subsoil, which may not be fit to grow grass on the other; therefore it must be borne in mind that poor subsoil must be replaced to the depth of six or eight inches by good soil, and this fact should be remembered when calculating the levels; when the levels have been decided on, and pegs (good stout ones) put in to mark them, the soil should be got into position as soon as possible, with no great length of time elapsing between the different portions, so that it may all settle down equally.

The foregoing preparations are best made during the autumn months, and left until the spring following, when it should be dug over, and when dry enough it should be raked to a fine surface and left until April. Just previous to sowing any weeds showing should be removed and the ground raked clear of all stones and rough material. About $\frac{3}{4}$ three-quarters of a bushel of seed to 100 feet square. The very best and cleanest seed should be procured from a reliable seed merchant, and sown on a calm day during the end of March or beginning of April; if a grass seed barrow be convenient it can be sown more regularly from it than by the hand, but failing the machine, the garden line should be used to mark off strips about eight feet wide; it is advisable to sow across, thereby ensuring a thorough seeding. The seed should be well raked in, or lightly covered with some finely sifted soil, and thoroughly rolled. I think it is a mistake to have clover mixed with the grass, except it be on a slope or bank which is liable to scorch; in that case the deep rooting clover will stand the sun better; sown on lawns it generally gives a patchy appearance, and on a tennis court is very undesirable, as it renders the court very slippery if at all damp. Towards the end of June the young grass should be cut with the scythe for the first few occasions, the machine being likely to pull up the young seedlings. The lawn should be frequently rolled (provided it be not too wet or too dry) and cut at least once a week during the summer and autumn months. It will be a few years before it becomes what may be termed a thick velvety lawn; but I prefer to sow a lawn rather than turf it, except that the sods can be had from a mountain pasture on which sheep

has been grazing for a few years; if this can be had there is nothing to beat it, as it will be possible to have a first-rate lawn in six months. Turf cut and laid during November or December and well rolled will be fit for anything by April or May, but whether it be sown or sodded the preparation should be the same.

To remove inequalities from old lawns it will be necessary to remove the top sod, which should be cut about one foot wide, three feet long and about one inch thick, care being taken to cut an equal thickness. If soil has to be added to fill up hollows it should not be too rich, or the grass will grow coarse and a different colour. A board about fifteen feet long, to act as a straight edge, will be necessary to show when the part undergoing alterations is level with the surrounding



OLEARIA RAMULOSA.

ground, the turf when being replaced should be well beaten down and any interstices filled in by having fine dry soil swept over it. To renovate an old lawn which may have become mossy, give a thorough scratching with a steel rake, some fresh seed added, and a light top-dressing of good, finely-sifted soil, to which has been added some grass manure. If this be done during the winter or early spring months a distinct improvement will be the result.

Where daisies, plantain, and other weeds are plentiful, it will be necessary to apply a good daisy sand during a dry warm period. Should rain follow close on the application of the sand, it becomes washed off, and the result will not be satisfactory. If the daisy sand be persisted with for a year or two a vast improvement will be noticeable on the lawns, the sand usually acting as a stimulant to the grass as well as destroying the weeds. If worms are plentiful they will ruin a lawn if not destroyed. There is a fluid prepared by Bentleys which, although expensive, is first class; it certainly does all that is required if applied on a dull warm morning.

Hippeastrums.

It is many years since the first hybrid *Hippeastrum* was raised named *Johnsoni* from the intercrossing of *vittatum* and *Reginae*. This is reputed to have been made by Mr. Johnson in 1811, while others say the credit is due to a Lancashire watchmaker; but the pioneer among hybrid *Hippeastrums* is undoubtedly Dean Herbert, who crossed all the species he could find, and it is said that he was severely admonished for tampering with nature.

In 1824 Herbert had thirty-five recorded hybrids, thirty of which were his raising, and since that period both Continental and British nurserymen, also many private growers, such as Sir G. Holford of Westonbirt, have produced many fine forms, which are truly gorgeous, and they are among the most brilliant of florist flowers.

The greatest display is usually to be seen in April, but with a little arrangement flowers can be had several months earlier and later than the month just mentioned; in fact Mr. Chapman, gardener to Sir G. Holford, has them in flower eight months out of the twelve.

The varieties now in commerce are large, and the shades of red are magnificent, while the white and paler forms make a pleasing contrast; but now we want a yellow, which may come by intercrossing some of the greenish-white kinds, and then careful selection of the progeny; at any rate it is worth striving for.

CULTURAL REMARKS.—The present is a good time to overhaul the collection of *Hippeastrums*, repotting those that require it, while others that were taken in hand last season, and are well established, say, in 7-inch pots, will only need a topdressing. This is accomplished by picking out a portion of soil without removing the plant, and replacing it with a similar mixture, as advised for repotting. Before commencing potting operations the bulbs should be turned out of their pots, taking away the soil and thoroughly cleansing them from mealy bug if this pest is present, and all decaying matter, such as dead roots, scales, &c.

A suitable compost consists of three parts good fibrous loam to one part leaf-mould, and to every bushel of the mixture add a six-inch potful of bone-meal, while a sprinkling of silver sand will be beneficial. They require somewhat firm potting, and the soil must be worked well between the roots, while the bulbs ought to be kept about two-thirds above the surface.

Overpotting must be avoided, and as a general rule fully grown bulbs will need receptacles six and seven inches in diameter. The repotting and topdressing should be done just as growth begins, and after this operation is finished plunge the pots to the rim in old tan, fibre, or leaf-mould, where a little bottom heat can be obtained, and an average temperature of 65° Fahr. maintained. If the sun is strong a thin shading will be necessary, and water will only be required in small quantities till the leaves begin to grow and the flower scapes appear. When in flower the plants may be removed to the greenhouse, where the atmosphere is dry, and if the blooms are protected from the sun's rays their beauty will be prolonged.

Directly the flowers have faded the plants must be taken back to their growing quarters—viz., the plunge bed, and as root action becomes more vigorous, additional water may be applied. The growing season for a general batch is from March to September, and during this period the syringe may be used in bright weather, and

plenty of air admitted both from top and bottom ventilators, whenever the elements are favourable.

When the foliage shows signs of decay, gradually withhold water at the base, and after being thoroughly ripened, give the bulbs a rest in their pots in a temperature of 15° Fahr., where they remain till wanted. As already stated the flowering season can be considerably prolonged, but for the early supplies well established specimens should be selected, and those that do not want repotting. A top-dressing, however, is advised, and before this is done give them a good soaking of water.

Propagation is effected by offsets and seed, the former to increase a choice variety, and the latter to secure new kinds; but where seedlings are raised only the best varieties should be crossed, bearing in mind the colour, size and shape. Offsets are removed at the time of repotting, and treated in a similar way to older bulbs. Seed should be sown as soon as ripe in ordinary pots or pans, and placed in a temperature of 65° Fahr., keeping the pans shaded from strong sunlight. When large enough to handle they may be potted off and kept growing the first year. Seedlings thus treated soon reach the flowering stage, and it will prove a most interesting time in watching them open.

Thrip and red spider are seen occasionally, but in these days they can easily be kept in check.—SOUTHERNER.

Hints to Amateurs.

By R. M. POLLOCK.

ANNUALS.—The term "annual" means a plant which during one year completes its entire life history; in other words, it germinates, flowers, produces seed and dies all within a year. They are invaluable to the amateur, and they well repay a little care and attention, both before and after sowing. An article on this class of plant appeared in last month's issue, which is worth reading. Ground that has been unoccupied during the winter, and which was dug in the autumn, does splendidly for annuals; failing this dig deeply and thoroughly spaces where a sowing can be made, and mix with the soil some good well decayed cow manure, smooth the surface over so as not to leave any large lumps, and on this sow the seed. It is quite difficult to sow too thinly, but it is a very easy mistake to sow too thickly, and the latter is detrimental to good results. It may be taken as a safe guide to say that the smaller the seed the less covering required, and this covering should be of fine soil, the ordinary soil sifted through a sieve will do. It must be fine for the young tender shoot to push its way up. Smooth this over, but be careful not to make it into a cake. When actually sowing, it is well to take some of the seed out of the packet and put it in a piece of paper that has a crease down the centre, and scatter it over the prepared surface. This ensures no more seed being sown than was in the piece of paper. The following are a few good annuals that can be safely sown in the open ground during this month:—*Cornflowers*, *Centaurea Cyanus*, blue or mixed, 2½ to 3 feet high. *Alyssum maritimum* compactum, "Little Dorrit," white, 4 to 6 inches. *Bartonia aurea*, yellow, 12 to 18 inches; rather spreading, and does best in bright sun. *Brachycome iberidifolia*, the Swan River Daisy, blue and white, 12 inches. *Clarkia elegans*, double, in several shades of pink and red, 2 feet.

Eschscholtzia, orange, yellow, and a very pretty pale pink. *Godetias*, in many colours, 12 inches. *Gypsophila elegans rosea*, excellent for cutting, 12 to 18 inches. Sweet Peas. *Linum grandiflorum*, Scarlet Flax, 12 inches; sow in full sun. Malope, Mallows, pink. *Mathiola tristis*, the "Night Scented Stock": not much to look at, but very sweet in the evening. *Mignonette*. *Nigella* "Love-in-a-Mist," blue, 18 inches to 2 feet. *Omphalodes linifolia*, grey foliage and pale blue flowers, 12 inches. Poppies of all sorts and all colours. *Virginian Stock*, in several colours, and will do anywhere. These can all be sown now, and a successional sowing made later on.

Half-hardy annuals, or such annuals as are not sufficiently hardy to germinate in the open, or cannot be depended on to do so, may be raised indoors. They can be sown thinly in pots, boxes or pans, and when fit to handle, if the ground is free for them, they can be pricked direct into the open or into other pots boxes or pans until the spaces which they are to occupy are free. On no account should they be left so long in their pots as to become "pot bound" or starved. A small hot-bed is a great addition to a garden, especially where seeds are raised, but it also has its drawbacks, as seedlings so raised cannot be put directly into the open ground, but require to be gradually hardened off in a cold frame. Among some of the most useful half-hardy annuals are the following:—*Asters*. *Alonsoa* "The Mask Flower," red, 12 to 18 inches. *Stocks*. *Nemesia strumosa* and "Blue Gem," all beautiful bright colours. *Petunias*. *Phlox Drummondii*, in separate colours. *Salpiglossis* make very pretty subjects in a border, growing 18 inches to 2 feet high, but require staking when fully grown. *Scabious*. *Venidium calendulaceum*, rather flat growing, with vivid yellow flowers, and seems to stand any amount of transplanting. It must be planted in full sun to get the best effect.

FRUIT TREES.—The fact of planting fruit trees against a wall points to two reasons—either that the variety is too tender to stand alone, and therefore requires the protection of a wall, or that it flowers so early in the year that if in the open it would be liable to injury by frost, wind or hail. Peaches and apricots are usually planted against walls in this country, and these will be the first to bloom, and will therefore require some protection against the elements. There are various ways of doing this, but the protection will only be necessary at night or during very heavy rain or hail in the day time. Late frosts are responsible for a lot of unset fruit blossoms. Old bast mattings, an old sheet, several layers of old garden netting, or any such material can be used. Put in two strong pegs at the top of the wall about a foot further out than the spread of the tree and attach the covering securely to these (if necessary, put a third in the centre). The two bottom corners of the material may also be tied to pegs in front of the tree, about 18 inches from it. This keeps the covering well out from the flowers, and at night it must be tied tightly down. During the day it can be rolled up and tied either on the top or at one side. Another method, and where available an excellent one, is to utilise the lights of garden frames, raising them slightly on bricks and lifting them off and on as required. If the weather is dull and sunless, as it has been lately, there will be few insects about to fertilise these early fruit

flowers, and it is advisable and interesting to do it artificially. A really soft brush or a rabbit's tail on the end of a stick will do, and with this gently dab the flowers, but it must be done very gently and carefully so as not to injure the flowers. If there is more than one tree of a kind it is a good plan to exchange the pollen, as some trees may be sterile to their own pollen.

Strawberries and raspberries may have a mulching of manure put round their roots. Stir the soil round the roots and put on the mulch. In the case of raspberries this should be of good farm yard manure, but for strawberries stable litter or manure with plenty of straw is best. The manure will soon wash down and nourish the roots, and the rain will wash the straw clean, on which the fruit will lie, and it will also help to retain moisture about the plants during the hot dry weather.

HOTBED.—This is one of the most useful means of raising plants or seeds. The usual size is that of an ordinary garden frame light, and when ready for use the actual bed itself should be a foot or so beyond this all round. Two loads of fresh stable manure with which there is a good deal of straw should be sufficient, and this should be on the premises a week or so before hand. It should be placed in a heap, out of sight, if possible, and all hard lumps broken up and if dry watered. Turn it all over at regular intervals, as it will heat rapidly when left in this heap. When it has been well turned, and seems to be of the same moisture all through, the hotbed itself may be begun. Spread the manure in layers, and as each layer goes on it must be trodden firm. When all the manure is on, the heap should be about 4 feet high, and to ascertain the heat, put a stake down the centre; after a short period remove this, and if it can be comfortably held in the hand the heat is satisfactory. Over this manure put about 6 inches of soil, put a thermometer inside, and place the light on to the frame. Seventy-five degrees is too hot, and if it attains this, apply more water and leave the light open. When the heat settles down and keeps steady the cuttings, seeds or whatever is wanted may be put in.

Roses may be pruned towards the end of the month. Full directions for this is given elsewhere in this number.

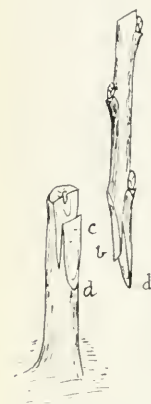
Ivy on walls may be trimmed in. It is quickest and best done with a pair of shears, and will very soon lose the ugly appearance it will have after the clipping. If not cut back now the strong winds will strip it from the walls. Grass edges may be cut, and any irregularities straightened. Sweep, roll and cut lawns, resow thin spots, and, where necessary, a topdressing of good fine soil may be given.

GREENHOUSE.—*Cinerarias* will be in full flower, and will have to be watched carefully, as they will dry out quickly in the bright sun. Give them plenty of water. Keep a watch on greenfly, and when necessary spray or wash with *Quassia Extract*, which can be had in small tins at a very moderate price.

To the ordinary amateur, with only a small garden, the bulbs which have flowered in pots, either soil or fibre, are of no use for growing in the same way again the following year. In time, if grown on in spare ground, they will make good bulbs again, but this can only be satisfactorily done where there is room. In that case they should be taken out of their pots as soon as they leave the greenhouse and planted in rows in a spare bit of ground and left undisturbed.

"Grafting."

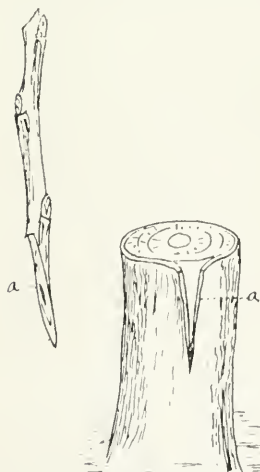
By ANDREW F. PEARSON, F.R.H.S., Glanmire, Co. Cork.



THE art of grafting fruit trees has been practised from time immemorial, and our forefathers knew the art thoroughly. It is one of the easiest and quickest methods of propagating fruit trees. As the sap is now flowing, the present month is a suitable time to graft apples, pears, and stone fruits. Taking the apple as one of the chief fruits in Ireland, it may be stated, without entering into the merits or demerits of stocks, that the Crab and Paradise are the two principally used—the former for standards and half-standards, as well as for trees that are to be trained. The Paradise stock is an admirable one for small bush cultivation, where high class culture is given, and it may be taken as the quickest to produce fruit.

Assuming that the stocks have been prepared by one season's growth in their present positions, and being cut back to near the point of fixing the graft, which should be at 6 to 9 inches from the ground level, and that the grafts or scions have been cut off the parent trees sometime ago and heeled in the soil on a northern aspect, the two principal agents are ready.

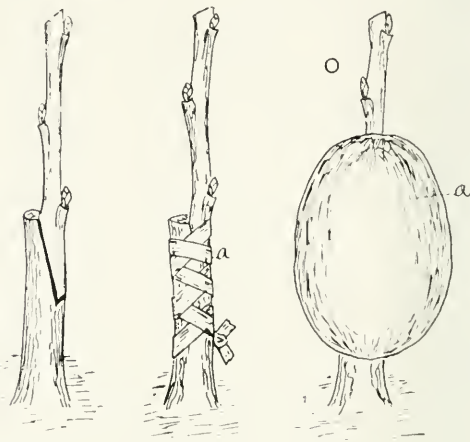
The young stocks will be somewhat larger than the scions (which, by the way, ought to be stiff, well ripened wood of one season's growth, not feeble green wood), and will be slightly in advance in growth of the scions—a very necessary thing to ensure success. It is also better to graft late than too early, but generally speaking the middle to end of March will give good results. Whip or tongue grafting is a suitable form for working young stocks; the old trees require a different sort of graft, which will be dealt with later. A sharp knife, a bundle of matting, and some



grafting wax or clay are all the requirements.

Begin by cutting the top of the stock with one stroke of the knife in an upward slanting direction, then about midway in the face of cut make a wedge-shaped cut downward to take the tongue of the scion, the stock is thus prepared. Next proceed by topping the scion, leaving three or four buds for future growth; one sharp stroke of the knife to make a sloping cut corresponding to that of the stock, then an upward cut in the face of the scion to fit very neatly into the wedge mouth of the stock, completes the cutting part of the work. Fit the scion into the face of stock,

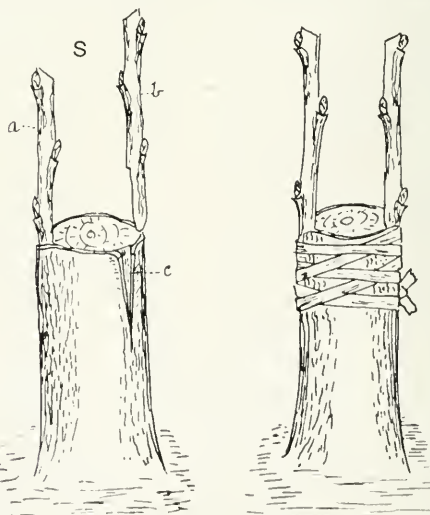
and, as mentioned before, the stock may be larger than the scion: but great care must be taken to make sure that the bark of scion and stock meet on one side at least, as it is only by the one layer of albumen in the stock meeting the corresponding layer of albumen in the scion that



WHIP OR TONGUE GRAFTING.

perfect union is ensured. There is no actual junction of old wood, but the cambium cells form new wood and new bast and bark.

The fitting having taken place, bind the scion to the stock firmly with matting, but not too



CROWN GRAFTING.

From drawing by E. H. Bower.

tight, then apply a light dressing of grafting wax over the junction to prevent evaporation of the sap from the cut surface. Place a stick to each graft, making one tie to the stock and one to the graft. This prevents damage being done by the wind shaking and displacing the graft, and prevents birds alighting on the graft and destroying the work.

In grafting old trees which, perhaps, have been producing fruit of bad quality, quite a different

form of grafting must be practised. Cleft, rind, and notch are three forms, but as the latter is probably the best kind, I will therefore write of notch grafting, as it is simple and usually effective. The tree to be worked on will, of course, have been headed down to the desired height during winter. Large old trees may have thirty scions fitted to them: a full bearing head will thus be quickly produced.

In preparing the old trees it is necessary to use a saw to cut a fresh surface, taking care that the bark is not peeled off: pare off the rough surface and edge with a sharp knife, make a V-shaped triangular notch with knife on the side of the stock, cutting slightly into the wood. Then take the scion, making a corresponding cut in it, fit same to stock, bind with matting, and proceed with the wax as described for young stocks.

on the Quince stock, if grafted on the variety William's Bon Chrétien, which itself is grafted on the Quince stock, it flourishes admirably.

The study of this particular branch of horticulture is entrancing, and the many advantages proved to result from the judicious use of grafting are numerous.

Grafting wax can be bought prepared in tins from any seedsman, but if the operator prefers to make his own it is an easy matter, as the ingredients are obtainable in any town or village. A recipe which I can recommend is in the following proportions:—4 lbs. resin, 1½ lbs. tallow, 1½ lbs. red ochre, ½ lb. burgundy pitch, melting the resin over a fire and pouring in the tallow and red ochre afterwards. When grafting, this preparation can be applied warm by the aid of a brush, taking care that it is not too hot when put on. Ordinary



CYPRIPEDIUM LEEANUM CLINKABERRYANUM.

A beautiful Lady Slipper Orchid.

Several scions may be set on the stock, according to the size of each branch worked on.

The operation of cleft grafting—viz., splitting the stem with a chisel and inserting scion in the cleft—I strongly condemn as likely to rot the stem and endanger the life of the tree. Other methods of grafting are wedge, saddle, side, double-tongue, inlaying, inarching and double-grafting, all of which have their own particular advantages. Side grafting is often resorted to when a blank in a tree occurs, such as a tier of branches in a horizontal-trained tree failing. Inarching is also a very useful and well-known form whereby two growing trees or branches of neighbouring trees are brought in contact with each other, and when united the scion is severed from its parent and then becomes a living part of the stock. The possibilities of inarching are very great, and union can be effected at almost any season. Double-grafting is resorted to when one variety of apple, pear, &c., is found unsuccessful on the usual stock. Take, for instance,

clay may also be employed and compounded as follows, viz.:—2 parts good clay, 1 part chopped hay, 1 part cow manure: all the ingredients must be well kneaded together, and will prove as good as the more elaborate preparation of grafting wax, and much cheaper.

Cool Orchids.

OF all the indoor winter flowering plants there are possibly none so useful or give such value, when properly treated, as some of the species of cool house Orchids. In selecting the following half dozen for the beginner or novice to make a start, I think he cannot go much astray providing the accommodation is at all suitable. Of course, to do them justice and expect the best results means to devote a house specially to their cultivation, which, however, does not come within the reach of all who have the wish to be

favoured position in an ordinary heated greenhouse should, with a little special care, meet the requirements of the following:—*Cypripedium insigne*, *Cymbidium Lowianum*, *Celogyne cristata*, *Epidendrum vitellinum majus*, *Oncidium varicosum Rogersii*, and *Lycaste Skinneri*. *Cypripedium insigne* is the easiest to cultivate; in fact it might be called the poor man's Orchid, as I have known it to thrive and flower for years under window gardening treatment. Some of the varieties, such as *Cypripedium insigne Sandere*, almost a clear yellow, and *Cypripedium insigne Harefield Hall*, a very large and distinct variety—which can be purchased at the present time for as many shillings as they were pounds eight years ago—would be the best investment, as they are much superior to the type plant and of equally strong constitution.

Cymbidium Lowianum is one of the best known garden Orchids, very free growing, and produces spikes of yellowish green flowers with a red lip, and lasting for a considerable time in flower.

Lycaste Skinneri is an Orchid of the easiest culture that should find a place in every greenhouse; the flowers are of various shades of pink, from light to deep, with a crimson lip.

The above-mentioned species require a good substantial potting compost consisting of equal parts fibrous peat and loam, not broken up too fine, with a liberal addition of finely broken crocks or coarse silver sand.

Celogyne cristata, one of the most popular and useful Orchids, carries a spike of from five to eight pure white flowers with yellow crests on the lips, and is very useful for decorative work.

Celogyne cristata likes a long term of rest when the pseudo-bulbs are completed—that is to say, only give water when the bulbs show signs of shrivelling, as the freedom in flowering of the plants greatly depends upon the rest given.

Oncidium varicosum Rogersii is a very beautiful and useful species having long branching many flowered stems bearing clear yellow flowers, a colour which is uncommon in Orchids at its season of flowering. It requires to be kept on the dry side for six or eight weeks after flowering.

Epidendrum vitellinum majus is a most useful and popular species and a good decorative plant, lasting from two to three months in flower; the colour of the flowers are orange red. A most suitable plant for the decoration of dwellings when in flower. *Requires to be kept on the dry side for six or eight weeks after flowering*, and a potting compost of equal parts fibrous peat, *Osmunda* fibre, and sphagnum moss will suit the three last mentioned species.

As success in the cultivation of Orchids depends principally on good potting and careful watering, I will endeavour to give a few hints on these points. Respecting the time of carrying out the potting of Orchids, it is generally one month or six weeks after flowering, or when the plant shows signs of making new roots after its rest, then it should be taken in hand. All the bad and sour material should be removed, also any useless back pseudo-bulbs. Before fixing the plant in its new pot or pan, the latter should be thoroughly clean; let the drainage come nearly half-way up the pot, or, better still, regulate it according to the amount of roots, placing a layer of the roughest of the potting material over the drainage, and working the soil firmly but carefully through the roots of the plant with a dibbler and finishing off with the

base of the plant on a level with the surface of the pot. An Orchid may be fixed so firm in its pot that it can be lifted up by the foliage without disturbance at the root.

Careful watering is necessary after potting, as a great many fail to meet with success through an overdose of water at this particular time, therefore never saturate an Orchid that has been disturbed at the root; just give as much water as will moisten the compost all through, keeping the plant rather on the dry side until the new roots have got well established in the compost. Never water an Orchid in dribblets. When well established give enough water to soak thoroughly through, then let it dry out again. If you are doubtful whether the plant is really dry let it go another day without watering, for it is by giving water when the plant is already wet that the compost becomes saturated and sour, and harm is done to the plant.—M. C.

Calceolaria Burbidgei.

By WM. GREEN.

THIS delightful yellow-flowered greenhouse plant has many qualities to recommend it, yet one does not see it as frequently as we ought. It makes a most appropriate subject for covering the pillars in the conservatory, blooming freely for the greater part of the year. It also makes a most attractive pot plant; the rich yellow panicles of bloom borne on stiff stems, are very pleasing and much appreciated in the dull winter months. Plants on pillars or against walls should have all the old wood cut away and young shoots coming from the base carefully tied in, as it is from these the large handsome trusses of bloom are produced. For pot culture cuttings should be taken the present month to form nice specimens for flowering the following autumn and winter in 6-inch pots; short-jointed young side shoots should be selected, two or three inserted round the sides of 3-inch pots in light sandy soil, and placed in the propagating frame, where they will quickly form roots. Afterwards the usual care of an ordinary greenhouse plant is all that is necessary. In early stages of growth the strong shoots should have their points pinched out to make the plants bushy; rough mellow loam, with an addition of leaf-mould and sharp sand added, makes a suitable potting compost. At the commencement of blooming weekly applications of liquid from the farmyard tank, diluted, will greatly assist them. Given a fair amount of root room, the plant has a natural tendency to grow long and adapt itself for covering walls or pillars in the greenhouse.



CHIVES.—This excellent vegetable should find a place in every garden, and especially in the amateur's, for it will be found most valuable in a variety of ways. Many consider a dish of salad not quite perfect if this is not present. And for soups too it is found to be a good substitute for onions. If there are none in the garden, roots might be planted at the end of this month or during March. Any ordinary soil made rich will meet all their requirements, and they may be set out at from six inches to one foot apart. Every few years established plants should be lifted and carefully divided and a new bed allotted to them. For the space they occupy exceedingly good value will be given.—J. T.

The Month's Work.

The Flower Garden.

By JOHN WHYTECK, Gardener to Colonel Crawford, Crawfordsburn, Co. Down.

SPRING bedding plants, such as *Myosotis*, Double *Arabis*, *Violas*, &c., that were planted early in the autumn, owing to the unusual mild winter that we have had, will soon be gay with flower. In dry weather the beds and borders containing spring flowering plants should be gone over and hoed and made tidy, and any plants, such as *Hyacinths* and *Tulips*, that require it given a stake to prevent them from getting broken with the rough winds that are prevalent this month.

LAWNS.—The grass should be gone over and thoroughly swept, so as to clear off any gravel or stones that may be on it previous to starting mowing. Tennis and croquet grounds should be kept regularly rolled.

BOX EDGINGS should be gone over and clipped, and any that require it relayed; also all walks that require it should be re-gravelled and rolled.

HERBACEOUS BORDERS.—Any work that had to be abandoned last month in the way of planting owing to rain should be finished as soon as possible, and now that a good many subjects are starting to throw up their young growths, a careful watch should be kept for slugs, as they are very hard on such plants as *Delphiniums*, *Pyrethrums*, &c. A good plan is to give those plants that they are fondest of a good coating of sand.

CARNATIONS.—Border varieties that have been wintered in cold frames should be planted out towards the end of the month in their flowering quarters, the ground having previously been prepared for them by being deeply dug and some well-rotted manure and old vegetable matter worked into the bottom. Before planting, the surface of the beds should be given a good sprinkling of soot, which should be lightly forked in; this acts as a stimulant to the plant, and also helps to kill any grubs that may be in the soil.

SWEET PEAS.—Those sown in pots in the autumn or early in the new year, and brought on in frames, should be planted out in trenches that have been prepared some months before for them, by deeply working and manuring. A good plan is to give the ground where they are to be planted a good dressing of soot a week before planting, and forking it well into the soil. A sowing outside as a succession should also be made.

PENTSTEMON, CALCEOLARIA, VIOLAS, and other hardy plants that were propagated and wintered in frames should be planted out where they are to flower, so as to make room for seedlings and other plants being pricked off into them.

DAHLIA TUBERS should be put in heat to encourage growth for cuttings. Propagate *Lobelia*, *Heliotrope*, &c., according to requirements. Bulbs of bedding *Begonias* should be started in a little heat, afterwards planting them out in frames.

BEDDING GERANIUMS should be potted and mossed. They do as well mossed as potted, and take up much less room. Any varieties that are scarce should have their tops taken off and propagated. They strike readily in a little heat at this time.

ANNUALS.—Most of the half-hardy annuals should be sown this month. They should be sown in heat, and when ready pricked off into frames for bedding out later on.

ROSES.—Towards the end of the month any mulching that has been on all winter should be taken off, and all climbing varieties should be gone over, and any growths that require tying-in done.

The Fruit Garden.

By D. MCINTOSH, Gardener to Alderman Bewley, Danum, Rathgar.

EARLY VINES.—The stoning process should take place during this month. This process is easily observed by the non-swelling of the berries, in which case it is important that the temperature should be slightly decreased, but kept as regular as possible. A high temperature, especially with early closing, must be guarded against, as it would only result in producing a large amount of useless surplus growth. The night temperature should not rise above 60° on cold nights and 85° by sun heat, closing with a temperature of 75°. At the commencement of stoning it is beneficial to give the borders a watering of clear lime-water. Allow all laterals to grow until the berries again begin to swell.

MID-SEASON VINES.—These will require close attention now as to pinching out the points of the shoots as soon as they have made two leaves beyond the lowest bunch, and stopping all side growths when they have formed one leaf the size of a shilling. Shoots that are apt to come in contact with the glass will require a piece of raffia tied near the points and slung to the wires, but be careful not to tie them down to the wires until the bunches are coming into flower, otherwise the shoots will be liable to break off. Only one bunch should be left on each shoot, as soon as can be seen which is the best one. If it is estimated that the crop is still too heavy, remove the smallest and worst-shaped bunches. Should red spider make its appearance sponge the affected leaves with weak Gishurst compound or soft soap and sulphur, and syringe forcibly afterwards with clear soft water between the bunches.

YOUNG VINES.—This is a suitable time for the planting of these canes. If they have been grown in pots, it is well to allow the soil in the pots to become moderately dry a few days previous to planting. Turn the plants out of their pots and shake the soil from the roots. Carefully spread out the roots along near the front of the house, and cover first with a little leaf-mould and sand, afterwards filling in with the ordinary vine border compost. Give sufficient water to moisten the soil, and cover with a little long manure.

OUTDOOR PEACHES, NECTARINES AND APRICOTS.—As these trees expand their blossoms very early, it sometimes happens if the weather is cold and dull the bees cannot visit the flowers, and consequently they do not become properly fertilised. If, therefore, it is noticed that the bees do not visit the flowers at the time of opening, it is highly desirable to fertilise by hand. This is easily done by using a camel's hair brush and lightly passing it over the centres of the flowers to distribute the pollen. This operation should be done when the stamens are dry.

Another important item in connection with the blossoming is protection from frost and heavy rains. Removable glass copings are best, if provided, and should be fixed in their places just before the expansion of the flowers. If there are none of the above, canvas or thick net should be spread over the trees. This material should be fixed to the top of the wall and hung to the ground, stakes being placed six feet apart, lying against the wall at the top, to keep the canvas or net from being blown against the trees. This protection must be drawn up every morning and let down every evening until the fruits have set, when it can be removed.

POT FRUIT TREES.—All pot trees should now be brought in under glass and set in position. Ventilate the house freely for the first fortnight, but do not allow the minimum temperature to fall under 38°. If the outside conditions are cold and sunless, it will be found a necessity to employ a little fire heat in the pipes to maintain the desired temperature with an abundant circulation of fresh air. Break up the surface soil in the pots with a strong blunt-pointed label, so that the watering and feeding can readily enter the ball of soil. Trees that have still to reach the flowering stage should be lightly syringed overhead and between the pots mornings and afternoons.

POT STRAWBERRIES.—The batch that was brought inside during the first week of February and put on shelves will be in flower early this month. Should dull, sunless weather prevail, take every precaution to ensure a good set. Fertilise the flowers daily when the conditions inside are dry and airy. Maintain a night and day temperature of 55 and 65° respectively until the fruits are set, when a more close and moist atmosphere, with a temperature 5° higher than the above figures should prevail. Whenever it can be seen which are the best and most shapely fruits to the number of eight or nine, cut off with a pair of grape scissors, at intervals of two or three days, what surplus there may be left. As the fruits commence to swell, apply to the plants frequent applications of soot water and liquid manure. Syringing of the plants must be continued until the fruits show signs of colouring, when it must then be discontinued.

The Vegetable Garden.

By J. G. TONER, County Instructor in Horticulture, Co. Monaghan.

EARLY POTATOES.—One must be guided by the conditions of weather and the nature of the soil as to the exact time of planting these in the open. It is now almost the universal practice to make use of tubers that have been sprouted, at any rate where the earliness is of more importance than the weight of crop. Being so tender there is always an element of luck in succeeding with the very first batch, as one sharp frost after they have appeared over ground upsets all calculations. Sprouted sets lose little time in pushing up their growths, so make use of every available means of protecting them. It is not a bad plan to sow rows of peas between every fourth or fifth drill, for when rodded they afford a good shelter sufficient often to save them from frost, even the rods serve this purpose. Little, if any, manure will be required, for this early lot is seldom allowed to mature, everyone being anxious to lift the early tubers. Should the soil not be in good

heart a moderate dressing of light crumbly manure will be helpful, but heavy wet material is out of the question.

PEAS.—It will be a good stroke of business if early peas are to accompany the potatoes to table. An extremely hardy and prolific kind for present sowing is *The Pilot*; it grows to about four feet in height. The good digger will have better peas than the man with much manure. Trenching of the ground, however, is not of so much importance for the first lot as for those to continue the supply during summer. Most gardeners—at all events most amateurs—sow far too thickly. See what *The Sweet Pea* people have achieved, partly through thin sowing or planting. At the same time allowance may be made at this season for various accidents, including the depredations of hungry slugs, by sowing thickly, but if this is done due attention to thinning later should be given.

CABBAGES.—Though by no means an aristocrat of the garden, cabbage, in the spring more especially, is welcomed by all. It is questionable indeed if a more healthy and appetising dish could be served than a half white and green cabbage properly cooked. Tenderness and flavour too usually follow a quick growth. Therefore it will be good to help towards this by giving a top-dressing of a stimulative nature when growth becomes active. Nitrate of soda made quite fine scattered lightly between the rows will work wonders in this respect, an opportunity being afterwards taken to fork the soil over to the depth of a few inches. The nitrate must not be allowed to fall on the plants. Soot, too, has a good effect. Plants that stood over from autumn can now be planted out for succession.

CELERY.—Many who have no appliances purchase their celery plants, and in this they are wise, for unless some heat is at command strong plants cannot be raised in time for early crops. In a warm greenhouse or hotbed seeds may be sown at once if plants are to be raised at home. A light rich soil, thin sowing, heat, moisture and absence of light until germination has taken place are in short the proper conditions. But after the seedlings appear light must be given in the greatest degree, keeping them quite near the glass, for otherwise they soon become weak and spindly.

SPINACH.—The summer variety is considered much superior to others. Where a constant supply is demanded, however, much care is necessary as regards successional sowings, for it has the fault of soon bolting or producing flower spikes. On poor soil it is hardly worth attempting so quickly does this occur, especially in spells of hot weather. Seeds can be put in now on the richest plot available in rows one foot apart. Early thinning will to a large degree defer the date of bolting, but monthly sowings at least are made where spinach is regarded with much favour.

ONIONS.—On very firm rich ground at the first opportunity sow seeds of onions. They require a long time for germination. The medium sized varieties will serve best those who have not had much experience. *James's Keeping* is a good all round kind for spring sowing, its keeping qualities, as the name indicates, being excellent. Another, not large, but a useful, onion is *Blood Red*; it is highly coloured and has a stronger flavour. *Tripoli* onion plants raised in autumn will do well if planted during this month.

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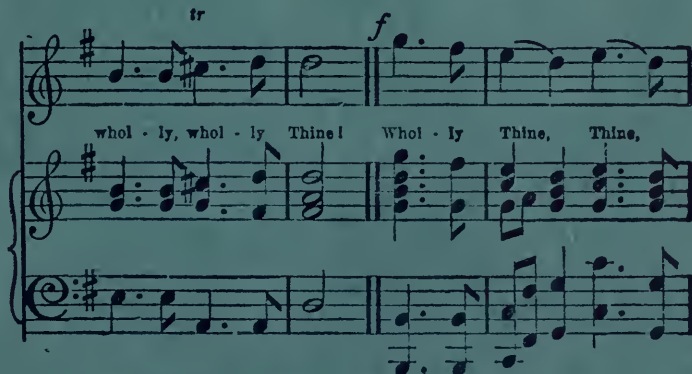
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Irish Gardening

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Grey-leaved Rock Plants.

By R. LLOYD PRAEGER, B.A.

A LARGE number of the most familiar plants of the rock-garden are grey-leaved. Sometimes, as in some species of *Helichrysum* and in *Diotis candidissima*, the term white might be used instead of grey; and from this extreme we have a descending series through grey to greyish-green, and finally to green. This tendency to grey-ness, as seen in such genera as *Artemisia*, *Achillea*, *Dianthus*, *Saxifraga*, *Alyssum*, *Arabis*, and so on, is the most striking feature in connection with the foliage of such plants, and is of high importance to us in diversifying our gardens when the plants are out of flower. If the grey-leaved plant be examined with a lens, or under the microscope, it will be found that the grey appearance is due to one of several causes—it may be a close felt or tomentum covering the leaves and stems, as in *Helichrysum*; or a dense covering of erect hairs, as in *Marrubium*; or an incrustation of lime, as in certain *Saxifragas*; or a layer of wax, as in the *Pinks*. These coverings serve important purposes in the economy of the plant. Sometimes their main object appears to be to assist transpiration by warding off rain which might other-

wise choke the stomata—the minute openings through which plants pass out their superfluous water, and breathe, and absorb carbonic acid gas for the manufacture of plant-food. But more often this grey covering has for its function the

protection of the leaf from intense sun-heat, which would cause excessive loss of water. As we pass southward across Europe these grey-leaved plants, rare in the northern Alps, become frequent in the southern Alps, and by the time the Mediterranean is reached, countless plants possess grey felty or downy leaves. Indeed, in no part of the world are grey-leaved plants so characteristic of the flora as in the Mediterranean region. There is



POTENTILLA KILMORINIANA.

A new and beautiful silvery-leaved shrub, with pale-yellow flowers.

hardly a single natural order in that area of which some members do not exhibit this character. Grey-leaved Composites and Labiates are everywhere; and Rock-roses, Bindweeds, Scabious, Plantains, and even Grasses, all are found clothed in grey. This is a protection against the hot dry summer which prevails there.

In spite of the great difference between the Mediterranean climate and our Irish one, a large number of these grey-leaved species grow freely

with us, and constitute an important section of our garden plants, especially in the rockery. Many of our grey-leaved species come from regions other than the Mediterranean, but most of them are southern.

To my mind the grey-leaved plants are particularly effective in the rock-garden, especially when they are properly contrasted with bright green things, such as cushions of the mossy Saxifrages, and dark green masses of Iberis, Lithospermum, and so on. Coming, too, as most of them do, from sunny well-drained habitats, they are thoroughly at home on dry rock-work: most of them in fact will flourish exceedingly if planted on the top of a mortar-built wall, where moisture is at a minimum.

If we want a grey back-ground for the rock-garden we have several shrubs of this type available—*Phlomis fruticosa* and others of that genus, the silver-leaved *Atriplex halimus*, and so on. Then there are smaller shrubs, such as *Atriplex canescens*, *Artemisia tridentata* (the prevailing plant on the American alkali deserts), *Ballota Pseudo-dictamnus*, the beautiful *Convolvulus Cneorum*, and those two excellent *Senecios*—the grey-leaved *S. Grayii*, and *S. compacta*, which has smaller green leaves edged with white and pure white below. With these dwarf shrubs may be placed the series of sub-shrubs of which the Lavenders are a type—characteristic Mediterranean growth forms—such as the *Helichrysums* with their felted white stems, the *Santolinas*, *Tanacetum aucherianum* and *T. argenteum*, *Pyrethrum densum*, &c.—all grey-leaved evergreen bushy plants. Among these, the strong growing prostrate *Othonnopsis cheirifolia* soon makes a bed of grey succulent foliage studded with golden flower-heads, and no position is too hot or dry for it. The *Artemisias* supply some charming grey plants of sprawling habit—the comparatively large *A. Stelleriana*, covered with dense felt, and the more delicate silky *A. sericea*, *A. argentea* and many others, down to the tiny *A. mutellina*. The native *A. maritima*, which is sub-shrubby, is one of the whitest and best of the genus, and *A. Roezlii*, of somewhat similar growth, is a graceful plant. But for masses of silvery foliage the *Achilleas* take first place. Some of them, like *A. umbellata*, *A. serbica*, and the one commonly found in gardens under the name *A. argentea*, will form a cataract of silver if planted on the top of a rock or wall; others are of more tufted habit, such as *A. Kellereri*, *A. Wilczekii*, *A. Clavennae*, and *A. Fraasii* (I consider these four about the best of the lot), *A. ageratifolia* (= *Anthemis Aizoon*), and the taller *A. pseudo-pectinata*. All the *Achilleas*, too, are abundant flowerers, and look delightful in June.

But I have been treating the grey-leaved plants rather from the point of view of foliage,

and shall continue on those lines. *Helianthemum tomentosum*, a vigorous Rock-rose with a wealth of golden flowers, makes a fine patch of grey, contrasting well with the many green-leaved species of the same genus. *Diotis candidissima*, a rare inhabitant of gravelly beaches, is the whitest of all our native plants, every part being covered with a dense coat of wool. It needs a very open sandy soil to make it feel at home. Several of the Hawkweeds (*Hieracium*) are good foliage plants, notably *H. gymnocephalum*, with its white felted growth, and *H. villosum*, with its shaggy leaves and flower-heads. Then, of course, we have the best-known of all woolly plants, the Edelweiss (*Leontopodium spp.*), in which the coating of hairs is densest on the flower-heads. The dwarf *Marrubiums*, such as *M. velutinum* and *M. sericeum*, are pleasing little downy plants, with whorls of whitish flowers. Another grey labiate is *Teucrium aureum*, which is a striking thing, with its display of silver foliage and golden flowers. The *Antennarias* are all effective felty plants, some white only on the under side of the leaf (as in *A. dioica*), some on both sides. Even some of the grasses develop a woolly coat, *Alopecurus lanatus* being a noted example—a pretty and interesting plant, but inclined to damp off in our wet climate. It is unnecessary to refer to the numerous Pinks, whose glaucous foliage adds so much to the colour-effect of the rock-garden. Some of the dwarf *Æthionemas*, such as *A. pulchellum*, have similar waxy leaves, and look delightful when this foliage is beset with rose-coloured blossoms. The Silver Saxifrages owe their colour to the presence of little pits with a limy incrustation, giving a handsome white margin in the larger species, such as *S. Cotyledon*, *S. longifolia*, *S. elatior*, and so on; while in some of the minute *Kabschias* the whole leaf is grey, as in *S. Salomoni* and some of the forms of *S. Burseriana*.

Many other genera supply us with effective grey-leaved plants—*Arabis*, *Alyssum*, *Draba*, *Acena*, *Potentilla*, *Onosma*, *Androsace* and so on: and if we wish to see hairy coats developed in minute perfection we may break our hearts trying to grow some of the delightful and difficult members of the *Aretia* section of the last-named genus.



THE DOG'S TOOTH VIOLET, *ERYTHRONTUM DENS-CANIS*.—It seems strange that this easily grown bulbous plant and its many varieties is not more often seen in gardens. The flat marbled leaves alone make it attractive, and the modest flowers, which will insist on looking downwards add to its charm. It will grow almost anywhere except in the hot sunshine, but on a bank, where the grass is not too strong, or on the corner of a bit of lawn, or even in the herbaceous border, near the edge, it is always a pleasure to see.

Plants in Rooms.

"WHAT causes the leaves of my palm to turn brown?" or "Why do the leaves of my Geranium turn yellow and drop off?" These and many similar questions are often fired off at anyone presuming to have a knowledge of gardening. "Want of care, want of thought" would often be a blunt but true answer. How is it that many women of the labouring class can grow and flower Fuchsias, Geraniums, &c., in their cottage windows year after year, while others of higher rank cannot keep these plants for more than a few weeks or months? In many cases the explanation lies in the fact that the cottager's wife realises that a plant is a living organism. The effect of gas may account for many of the tenderer kinds of plants, but there are other causes which hasten and contribute to a premature death. A wise plan is not to buy a plant from a casual hawker, for possibly it is defective, or has been brought direct from a moist, warm greenhouse, conditions which are impossible to produce in an ordinary room. Purchase from a respectable nurseryman a well hardened plant, for you have a certain security in his natural desire to do further business with you. For permanent occupants of the dwelling-house one has to rely upon foliage plants, but for spring and summer many flowering plants may be used. Plants like Geraniums will become leggy with age and also lose their lower leaves, but let this evil day be put back materially by thoughtful care and attention. When the weather is mild, plants like a lot of fresh air, but they do not benefit by a window sash raised a couple of inches with a cold wind blowing directly upon them, for they will catch cold like a human being. Rather put your plants right out on the window sill when the weather is mild and while the rooms are being dusted. If a gentle shower is falling place the plants where they will receive the full benefit of it, for it will cleanse the foliage as well as water them. If you value your plants never let dust remain upon the leaves any more than you would upon your piano. Plants breathe as we do, and dust and dirt will clog the breathing pores and, gradually hindering the work of the leaves, will lessen the plant's vitality. Plants with smooth shiny leaves benefit greatly by being sponged occasionally, or they may be held over a basin and doused with lukewarm water.

Watering is the stumbling block to many people. "Give a little water every day" is a common but a bad rule, equally bad is the plan of letting a plant stand in a saucer of water, with the exception of such thirsty subjects as the *Spiræa*.

The safest plan to water a plant is to remove it from its receptacle and stand it in a pail of water sufficiently deep to cover the rim of the pot. When the air bubbles cease coming up from the soil in the pot, the plant may be stood to drain. This method is particularly well suited to plants having a dense mass of roots in a pot, like Palms and Ferns. The plants should not receive any more water until the soil in the pot shows signs of becoming dry again; this will depend altogether upon the heat of the weather and the activity of the plant.

Again, plants require food. One cannot expect luxuriant plants to live on the same soil for ever without any food.

In villages one often sees windows full of bloom; there the favourite Geranium is usually re-potted annually and given various "feeds" during the summer. Artificial manures may be used for feeding, so there can be no excuse for starving a plant on the plea of cleanliness. Judicious feeding means finer flowers and a greater quantity, especially if the old flowers are cut off as they fade.

Spring is the time to repot, and while plants like Fuchsias and Geraniums will be all the better for an annual repotting, other slower growing plants like Palms and Aspidistras will not require the yearly potting, but if an inch of the old soil is taken off the top and renewed with a mixture of good turfy soil, leaf-mould and sand, the plants will appreciate the change.

Light is life to a flowering plant. The very fact that the green colouring matter (Chlorophyll) is in the leaves is evidence to this statement, for the green matter is only developed in the presence of light, and requires light to do its important work of changing inorganic matter into organic or preparing food for the plant. Such plants as the Aspidistras and Ferns will thrive where it would be folly to place other plants requiring more light.

A beginner should start with the Aspidistra, for it is a welcome green or variegated plant the whole year round, and is long suffering, and will endure a great deal of hardship. *Aralia Sieboldi*, sometimes called the Caster Oil Plant, is also good for a start, and if in time it lives to get leggy it can be planted in the open ground in a sheltered place.

Ferns are grown in quantity for decorating. Those with hard stiff fronds usually stand the best, such as *Cyrtodium*, *Pteris serrulata*, &c. Some of our native Ferns are handsome as pot plants if grown well; the Hartstongue and Aspidium are good, while *Woodwardia radicans* can also be recommended for a cold room of fair size.

Numerous flowering plants will thrive in well lighted windows during the summer months if carefully tended.

The Bog Garden.

By J. W. BESANT.

FROM early spring till late autumn one of the most beautiful and interesting parts of the hardy flower garden is that in which are cultivated those plants which flourish best under cooler and moister conditions than usually obtain in the herbaceous border or rockery.

No hard and fast rules can be laid down regarding the choice of position for a bog garden, though proximity to a pond, lake or streamlet is an advantage in providing a ready supply of moisture. Frequently hollows and glades exist which are always naturally moist, and these, without much trouble, may be made into beautiful gardens by simply clearing out rubbish and bringing in a few loads of peat for such plants as require it. In connection with the rock garden small bogs are very often an attractive feature, providing a congenial home for many plants which belong to high mountains, and are nearly always bathed in mist, their roots growing between rocks, which are always wet in summer and dry in winter when covered with snow.

Where a bog is contemplated away from a ready supply of water, it is necessary to use peat at least eighteen inches deep in its construction, as the peat when once thoroughly wet will remain so for a long time. Some loam, leaf-soil and coarse sand may be mixed with the peat. Such a compost will remain moist enough with rain and an occasional watering during a prolonged drought to grow such charming plants as the *Cypripediums*, *Forget-me-Nots*, *Alpine Ranunculuses*, small *Gentians*, *Primula rosea*, *P. denticulata*, *P. minima*, *Dodecatheons*, *Anemones* of various kinds, *Orehis latifolia*, and many other hardy *Orchids* and dwarf moisture-loving plants.

For a bog garden of larger dimensions formed

near water there is a host of strong-growing handsome subjects of which some idea may be gleaned from the illustration on the opposite page.

In this case the use of peat in such large proportion is not so necessary, since the proximity of the water will ensure the essential moist condition at all times during the growing season.

Formality in marking out the boundary should be avoided. A glance at any natural stream or lake will show many examples of natural curves, which we may imitate as near as possible in setting out an artificial bog garden by water. Whether or not the existing soil will have to be removed depends entirely on its quality. If, as

in the case of the bog illustrated, it consists of dense clay, some of it will have to be got rid of and replaced by a more friable medium through which the roots can work their way in search of food material. To get the best results from strong rooting plants like *Spiræas*, *Astilbes*, *Senecios*, *Trolliuses*, the beardless *Irises*, herbaceous *Lobe-*



PRIMULAS AND DODECATHEONS, &c.,
in Mr. Walpole's Garden.

lias, &c., plenty of cow manure should be incorporated as the work proceeds. It is well to arrange matters so that some portions of the bog will be drier than others. Should the position be one that slopes down to the water's edge this is easy, but if the ground is flat mounds may be raised here and there to accommodate plants which require drier conditions, especially in winter. Also the compost may be varied, using peaty soil in the higher parts to retain moisture during summer and to provide for such plants as resent too rich conditions. Some of the smaller bog plants prefer a damp sandy soil, and these may be planted towards the boundary furthest from the water.

If the bog is of considerable size it is very important to provide stepping stones to enable workmen to get about among the plants, and the owner will frequently want to examine some plant more closely than would otherwise be possible.

With regard to plants suitable for the bog garden there is a wide and varied selection. Many not strictly bog plants in the ordinary sense are utilised because of their increased vigour under such conditions, and this is especially the case with some herbaceous plants which are difficult to do well in hot dry soils.

It may be useful to mention a few plants which have been found useful for bog gardening.

PLANTS FOR RICH MOIST SOIL. PEAT NOT BEING ABSOLUTELY ESSENTIAL—*Artemisia lacti-*

I. spuria, *I. Delavayi*, *I. sibirica* and *I. Kämpferi*; *Primula japonica* and varieties, *P. pulverulenta*, *P. rosea*, *P. bulleyana* and *P. Unique*; *Mimulus cardinalis*; *Podophyllum Emodi* and *P. pellatum*; *Diphylleia cymosa*; *Trillium grandiflorum*, *T. sessile* and *T. sessile Snow Queen*; *Lilium pardalinum*.

DWARFER PLANTS WHICH FLOURISH ON THE DRIER PARTS OF THE BOG.—*Ourisia coccinea*; *Meconopsis paniculata*, *M. Wallichii* and *M. integrifolia*; *Primula capitata*; *Mimulus Lewisii*,



SPIRÆA TIME IN THE GLASNEVIN BOG BED.

Plants in flower are *Mimulus*, *Artemisia lactiflora*, *Astilbe Arendsii* and *grandis*.
Spiræas and *Meconopsis*.

flora, *Lysimachia clethroides* and *L. ephemerum*; *Sidalceas candida*, *spicata*, *malvæflora*, &c.; *Liatris spicata*, *L. graminifolia* and *pycnostachya*; *Monarda didyma*; *Lobelia cardinalis*, *fulgens*, *Firefly* and *Gloire de St. Ann's*; *Trollius europæus*, *T. asiaticus*, and the fine garden forms *T. T. Smith*, *Orangeman*, *Newry Giant* and others; *Astilbes Thunbergii*, *grandis*, *dauidiana*, &c.; *Spiræa camtschatica* and the garden hybrids like *Fairy*, *venusta* *magnifica* and others; *Rodgersias pinnata* and *podophylla*; *Saxifraga peltata*; *Caltha elata*, *polypetala*, *radicans* and *palustris plena*; *Ranunculus amplexicaulis*, and *Anemone narcissiflora*.

PLANTS WHICH THRIVE IN A PEAT MIXTURE.—*Iris aurea*, *I. monaurea*, *I. Monnierii*, *I. monspur*,

M. radicans, *M. primuloides*; *Dodecatheon Meadia*, *D. Hendersoni* and others; *Orchis*, such as *foliosa*, *latifolia*, *maculata*, *mascula* and *purpurea*; *Cypripediums* in variety; *Saxifraga Fortunei*; *Myosotis palustris*, &c.; *Sanguinaria canadensis*; *Nierembergia rivularis*.

DWARF SHRUBS SUITABLE FOR THE BOG GARDEN.—*Ledum palustre*; *Andromeda polifolia*; *Cassandra calyculata nana*; *Erica mediterranea* and varieties, *Erica vagans*; *Myrica Gale*; *Epigæa repens*; *Gaultheria nummularifolia*, *G. procumbens*; *Arctostaphylos alpina*; *Vacciniums* in variety; *Oxycoccus palustris*; *Pieris floribunda*, *Bryanthus empetriflorus* and other species; *Daboecia polifolia*, and *Rhododendron ferrugineum*.

As mentioned earlier in these notes, the nature of the staple soil must be considered in deciding whether much peat will have to be used or not. Many of the herbaceous plants quoted as thriving in a peat mixture would probably do quite as well in some kinds of rich, moist loam. Peat in itself contains very little nutriment, but acts as a sponge to retain water, hence the necessity for mixing it with loam and rotten manure for the herbaceous plants.

With regard to the shrubs noted above, they mostly belong to the Heath or *Erica* family, and live naturally on peaty soils, and are apparently able to extract therefrom sufficient nourishment to sustain them, and anything in the way of rank manure is to them fatal.

Auriculas.

How these erstwhile garden favourites seem to have dropped from public favour! We remember when the small cottage garden was not considered complete without them (perhaps not so much in Ireland as in England), yet they are quite seldom seen nowadays. Some of the older and commoner sorts, beautiful and easily cultivated as they were, are to-day almost rare in comparison.

As with many others of our grandsires' favourites, they are, however, we are glad to note, returning somewhat to favour again, and it is well that this is so, for few spring flowers equal them in beauty, none in delicious fragrance, and there is no easier flower to cultivate.

The original Auricula is said to have been of a pale primrose colour, with very powdered leaves. From this parent came the few old favourites we used to know, but there was not, in our younger days, the enormous variety of colours that hybridists have now succeeded in producing.

There are two varieties of Auricula—viz., the "Show" and the "Alpine," and it is particularly with the latter we would treat to-day, as this is the hardy and more useful sort, and the more likely to be popular on account of their adaptability for rock gardens or borders, as they are perfectly hardy, mind winter frosts very little, and recuperate in early spring in a really marvellous way, even after the most severe winter. They are easily raised from seed, sown, for preference, under protection in early spring, pricked out when fit to handle into "nursery" beds of nice, light rich soil (leaf-mould should form a big percentage of this compost), and finally planted out in autumn where desired to flower. Seed, however, can be sown on almost any day of the year, if the extra time and trouble can be expended on them to carry them through their first winter.

The seed, being quite small, should be sown on firm, level, fine soil, in shallow boxes rather than in pots, and should on no account be covered with soil; treat similarly to *Begonia* seed in the sowing. They come along but slowly, but to the keen enthusiastic gardener this perhaps but enhances their value.

Really "good" strains of Alpine Auriculas are not to be had for the asking, and it is worth paying an extra shilling or two for a genuine good strain, as the variety of colouring, robustness of constitution and floriferous habit are of special value in Alpine "Ries."

For those who have not the patience or time to spare in raising from seed, we would commend the purchase of choice one-year-old seedlings, as the immense variety of colouring attainable even in a dozen or two of seedlings is truly wonderful, and a great source of delight.

For the ordinary amateur, who has often only a limited sum to expend, it is hardly possible to buy "named" varieties, owing to their cost, but those who can afford to border with particular shades of yellow, for instance, will find them "extra" for that purpose.

We have in our mind's eye a winding shrub border, or rather a semi-wild border backed with evergreen and flowering shrubs, and bordered with a triple ribbon edge of Alpine Auriculas, principally of two or three shades of yellow, and some three or four purples and deep dark crimsons. The bordering was perhaps 24 inches wide—a perfectly glorious blending of colours, and a sheet of bloom, which, once seen, was not easily forgotten. Alas! where those beauties then flourished, now grow brambles and weeds; the spacious lawns and croquet grounds are the habitat of cottagers' asses and goats, and a visit after some twenty-five years to this once charming spot was a thing to regret for long after. *Sic transit gloria mundi*.

Those who boast a cool greenhouse, even an unheated one, can revel in these charming flowers, as they make excellent pot plants, and are of the easiest culture. They like good drainage, firm potting, moderately rich light soil: let them not suffer from drought, yet do not allow stagnant water at the root. They come in, under cold treatment, in March–April, and in the open border from the end of March to middle of May, thus brightening our dark rooms, or dreary borders, at a time they are particularly short of all but bulbous subjects.

We are glad to see the Auricula is being taken up by some Irish nurserymen again, and have no doubt that we shall soon be treated to a feast of bloom at some of our spring shows, where they have been conspicuous by their absence for many years.

M. S. S.

How to Grow Hyacinths for Exhibition.

By REGINALD T. HARRIS, Saintbury, Killiney.

GIVE your order early to your seed merchant, the end of June or beginning of July, so as to enable him to get the well-seasoned bulbs, which should not be too large. The medium size heavy bulbs are better than the larger bulbs, and give better results.

The bulbs will arrive about end of September or beginning of October; they should be placed on a cool shelf until the time of potting. If you intend to exhibit and the date of show is about 20th April, the best time for potting is about the middle of October.

The soil should be light and rich good loam, with a very liberal mixture of old rotten horse droppings and a little leaf-mould and sand. If old pots are used they should be well washed; if new ones they should be soaked in water for at least three or four days before being used.

Before potting clear off all small bulbs or offsets; place a piece of sod over the hole of the pot to prevent the worms getting in and the roots from growing out; then fill with soil, leaving the apex of the bulb just above the surface and press the soil firm. The soil under the bulb should not be pressed before it is planted; a little sand under the bulb is very beneficial. After potting give a good watering and place them in some out-of-the-way corner where they can have protection from frost by covering them with about 6 or 8 inches of sand or fibre. Ashes I do not recommend, as their material contains a good amount of sulphur, which generally means a failure in having good flowers. They should not be left in this position longer than ten weeks, by which time the leaves and flower spike will be pushing into life.

Remove them to a cool greenhouse or frame, one facing north is the best. Keep close to the glass at all times, admitting plenty of air: an occasional watering with weak liquid manure or soot will be most beneficial when the flower spike is showing colour.

In order to exhibit in a class, say, 12 Hyacinths, all different, you would require at least 15 varieties—nine or ten bulbs of each.

Be careful and choose the best named varieties, for some varieties come into flower sooner than others. By attending the shows you will soon find the varieties most suitable for exhibiting.

I attribute my continual success at the R. H. S. Shows to following the above simple rules.

Notes.

Variegated Dogwoods.

CORNUS ALBA var. *Spæthi* was raised at the notable Berlin nurseries some years ago, and has proved itself to be almost the best ornamental deciduous shrub with variegated leaves which we possess for the variegation remains constant throughout the whole season. The leaves are large, having a very broad and irregular margin of gold, and the foliage is not liable to be scorched like more tender shrubs.

It is seen to the best advantage when planted in a mass or bed situated in an open position, for the more sun it gets the richer and brighter will be the colour. When the desired space is covered it can be pruned back, and the resulting foliage will be finer; this should be done in April, for the bright red bark gives a cheery look through the winter.

To increase the stock-layering is the surest way; select strong, half-ripened growths, strip the leaves off at the base, tongue the shoot, and peg down as for Carnations, afterwards supporting the shoot above ground with a small stake; when well rooted the layers can be severed from the parent and planted out.

C. Mas elegantissima is the tricoloured variety of the Cornelian Cherry; the yellow flowers open on the leafless twigs in early spring, while the green and gold leaves are suffused with pink.

This shrub can be used for conservatory decoration with as good effect as *Acer Negundo*, standards being especially appreciated for this purpose.

Chorozema varium.

THIS is one of the beautiful hard-wooded greenhouse plants which has partly fallen into neglect. From above its holly-like foliage rise brilliant sprays of pea-shaped flowers of an unusual colour, the standard being of a tawny orange with a yellow eye, and the keel bright carmine. In a temperature of 40° to 50° the flowers open continuously from February to May, small plants one foot high being as free flowering as those three feet in height.

As it is of a half-climbing habit, the best effects may be obtained by training on a small pillar, a trellis, or a balloon-shaped stand, but it should not be too formally tied, as it thereby loses the grace imparted by the pendulous shoots. It also forms free-growing bushes; these should be pruned after flowering, and when starting into growth repotted, giving ample drainage and using a fibrous compost of half peat and half loam with plenty of sand. The plants should be potted very firmly, for loose potting is a frequent mistake in the culture of hard-wooded plants. Towards the end of summer they may be plunged outside in a sheltered position to get the growth thoroughly ripened.

C. Chandleri is an improved form, and *C. Lowii* has larger flowers of a deep colour.

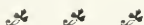
Propagation may be effected by cuttings taken from the new growths after pruning, and inserted under a bell-glass with a good bottom heat.

Narcissus Johnstoni.

THIS is, without doubt, one of the most distinct and beautiful Daffodils in cultivation. Supposed to be a natural hybrid between *N. Pseudo-Narcissus* × *N. cyclamineus*, it is found growing wild in Portugal, where it was first discovered in 1886 by Mr. A. Tait. The graceful drooping flowers, borne on stiff stalks seldom more than 6-8 inches high, are produced in early April, and vary in colour from soft sulphur to a pale lemon. The perianth is gracefully reflexed, whilst the trumpet, which is usually about three-quarters of an inch long, is of a distinct and elegant form, being almost quite cylindrical throughout its whole length.

Many people experience difficulty in the successful culture of this Daffodil. Despite the most careful attention it is seldom a success in the open border, and even in a sheltered corner of the rock garden it has an awkward tendency to die out after a few years. Naturalised in grass—preferably under trees—it, however, succeeds extremely well, and forms a delightful feature when in bloom. An ideal site would be on the border of a lawn, where the grass would not be long at the time of flowering, and if planted in bold groups in such a position, and especially nestling around the stems of trees, a charming picture is obtained.

Narcissus Johnstoni has two forms, which are known as the King and the Queen of Spain. In the former variety the mouth of the trumpet is beautifully frilled, and in the latter the trumpet is perfectly cylindrical and the mouth is quite straight. These two varieties, if interplanted in grass, form a very pleasing combination (as shown in the photograph), and both varieties will increase steadily.



PRIMULA ROSEA.—This is one of the many beautiful Primulas which have come to our gardens from the Himalayas. It is perfectly hardy, and will grow in almost any moist soil, but the quality of the blooms and the strength and vigour of the plant varies considerably according to the position in which it is placed.

Divide Perennial Sunflowers to obtain Fine Flowers.

THE perennial Sunflowers are an extremely useful class of herbaceous plants for late summer and autumn display. Owing to their very robust habit of growth some forethought is necessary in planting them: the back row of the herbaceous border is an excellent position for them, whilst planted in bold groups in the shrubbery they are very effective when in flower. Although they will grow almost anywhere, and without any attention, they will amply repay liberal treatment. They are gross feeders, and after a few years the soil round the clumps becomes impoverished, the stems of the plant also become thin and weak with a corresponding reduction in the size of the flowers. The clumps should then be lifted and divided, the present being a yver good time for the operation.

Before replanting, plenty of farm-yard manure should be dug into the soil to a depth of two feet; portions taken from the outside of the clump, being the youngest, should only be replanted: the centre portions should be discarded or transferred to the shrubbery. If quality, and not quantity, of flowers is desired the flower stems should be thinned out in spring, leaving only the strongest ones.



NARCISSUS JOHNSTONI.

The genus *Helianthus* contains a large number of species, only a few of which are, however, worthy a place in the garden.

Helianthus mollis is a neat grower from 3 to 4 feet high, with downy and almost silvery foliage, and golden-yellow flowers, the flowers standing out horizontally from the stems.

H. orgyalis has handsome foliage, and grows from 6 to 8 feet high, but in many seasons the frost injures the flowers before they open. The best garden plants are the varieties of *H. multiflorus* and *H. rigidus*.

H. multiflorus maximus has fine large single flowers, while good double forms are Bouquet d'Or, Meteor, and Soleil d'Or.

The *Helianthus rigidus* set, often called Japanese Sunflowers, have long running underground stems, and the flowers are exceedingly useful for cutting. Some of the best are—*H. G. Moon*, *Sparsifolius*, *Miss Mellish*, and *Miss Willmott*.—S. R.

Roscoea cautlioides.

THIS is one of the finest plants sent home by Mr. George Forrest while collecting in China for Messrs. Bees, Ltd., of Liverpool. Everyone who saw it in Bees' exhibit at the Royal International Horticultural Exhibition last year was struck by its unique character and beauty. It belongs to the same natural order as the "Canna"—*Scitamineæ*—and its relationship to that gorgeous genus is evident upon an inspection of the flowers. When the plant was submitted to the Floral Committee of the Royal Horticultural Society for an award, we understand that a doubt was expressed as to its hardiness, and that this was practically the sole reason no award was made. It is a plant of great beauty and unique character, so that we may well express a hope that it will eventually prove amenable to outdoor cultivation in the British Isles. There is reason to believe that this will prove to be the case, as Messrs. Bees inform us that plants have come safely through the past winter, on their exposed nursery in North Wales, without protection of any kind.

The roots are fleshy, almost tuberous, partaking of the same character as those of *Eremurus*. There seems no reason why they should not survive if planted four to six inches below the surface, as is done with many other fleshy-rooted plants. A well drained sandy loam, with or without a slight admixture of peat, is recommended as the best medium in which to grow this fine new plant.

The colour of the flowers is a particularly refined shade of yellow: something deeper than "primrose," but not so crude as "canary." It most nearly resembles the fine tint which gives value and attractiveness to *Meconopsis integrifolia*. As many as half a dozen flowers are produced in succession at the apex of each strong stem, the season lasting from May till July. The foliage

reminds one of the Iris, bright green in tint, erect, and seldom more than three-quarters of an inch wide. The flower stems grow about twelve inches in height, and carry the blooms well above the leaves.

Roscoea purpurea (called *sikkimensis* by some) is the only other species in general cultivation, but the colour is not very striking, and this probably accounts for the fact that it is not at all common in gardens. We understand, however, that Mr. Forrest has sent home another species with flowers of a fine Tyrian purple, of which we shall doubtless hear more in due course.—E.H.



THE GREENHOUSE FLAX

Linum trigynum and *tetragynum* are old but very useful plants for the decoration of the conservatory throughout January and February. Planted in a border of a greenhouse corridor their bright yellow flowers have been exceedingly gay for a long time, the foliage is clean and healthy, and not so subject to red spider as pot-bound plants.

Linum trigynum, with three styles, has an erect habit, with orange-yellow flowers; while *L. tetragynum*, with four styles, has long arching shoots covered with lemon-yellow flowers; although usually known as *Linums* they are now referred to the genus *Reinwardtia*.

Cuttings may now be inserted in sandy soil in a propagating frame with a temperature of about sixty degrees, and kept close until they are

rooted. If to be grown in pots they can be transferred from a 3-inch to a 5 or 6-inch pot, and may be grown quite cool through the summer months.

Sometimes the inside of a greenhouse wall looks very blank and bare; a pleasing effect is easily made by clothing it with plants. Fasten some strong wire-netting to laths about 2 inches from the wall and fill up the space between the wire and wall with fibrous peat and loam; then this may be planted with *Selaginellas*, Ferns and *Linum tetragynum*; the long arching shoots of this plant show to great advantage in such a position.



Photo by]

ROSCOEA CAUTLIOIDES

[Bees, Ltd

Hints to Amateurs.

By R. M. POLLOCK.

ANNUALS.—Another sowing may be made, following the directions given in the March number. This sowing will succeed that made last month. If the March sown seeds are up, see that they are protected from slugs; a sprinkling of soot is good, but soot and lime equally mixed is also good. Cats are one of the worst troubles that beset owners of small gardens. Freshly-worked soil seems so have a charm for them, and the seeds are no sooner sown, and everything left clean and tidy, than the cats are there cutting capers on them. Seed protectors made from netting can be purchased, but circles of cheap rabbit netting, raised slightly on pegs, answer the purpose. As soon as the seedlings are fit to handle, thin them out if too thickly sown. If the ground in which they are growing has been properly prepared, and provided the seed was good, the seedlings will go ahead quickly and well fill the spaces allotted to them. Attend carefully to watering when required.

Annuals that were raised in the hotbed will require very careful hardening off. They will, of course, be very tender coming out of the heat, and if there is a greenhouse available with a little heat at night, they might be put there on shelves, otherwise a frame in a sunny position will have to be requisitioned.

Biennials, which include Wallflowers, Canterbury Bells, Foxgloves, Iceland Poppies, Sweet Williams, Hollyhocks and others, may towards the end of the month be sown out of doors in lines. Open a shallow line about 2 or 3 inches deep, which can be easily done with the end of a garden rake; sow the seeds thinly, and cover. Remember to put some mark as to where the seed is and how far it extends, and it is also interesting to date sowings. Some seed germinates much faster than others, and it is also often useful to know how long plants take from the time of sowing to reach the flowering stage.

Newly erected arches, while the permanent occupants such as Roses, Clematis, &c., are still small, can be made to look less ugly by sowing quick-climbing annuals and other plants, which will cover them for the first season. Some of the ornamental Gourds look very handsome, but the seed must be sown singly in pots, and planted out when about 8 or 12 inches high. Slugs have a particular liking for these seedlings, as presumably they are soft and luscious.

The Canary Creeper and Convolvulus are two quick-growing annuals which can be sown direct in the ground. *Tropeolum tuberosum* makes a very pretty climber, but the tubers of this must be planted as far from the permanent plants as possible, so that when lifting in the autumn the other roots will not be disturbed.

Roses not already pruned should be done at once. If some of the first leaves come curled, look carefully into them; a small grub is usually the cause, and death by squeezing is the only sure method of ridding the garden of this pest.

DAHLIAS.—As stated in a previous issue, there is a method by which Dahlias can be increased

when no frame or greenhouse is available. This can be done by dividing the old tubers. It must be remembered that it is only at the juncture of the old stem and the tuber that the eyes are found from which growth will start, and when dividing there must be a few of these eyes attached to the piece taken off. It is very risky to leave only one, as something might happen to the one shoot, and that would be a distinct loss. The portion taken off, which should be done with a sharp instrument, may be immediately planted out in well-manured ground, but a good covering, say 4 to 6 inches of soil, should be over them, as otherwise the soft young shoots might be induced to push up above the ground too soon, and be injured by late frosts.

Towards the end of the month Violets which have done flowering may be lifted, divided and replanted. Plant them in semi-shade, and give the ground a good manuring. There is little use attempting to grow Violets where the soil is light and where the plants are liable to suffer from drought. In this kind of soil the plants never thrive, and the stalks are short and often very brittle. What is more beautiful than a bunch of deep-coloured Violets, each with a stem 6 to 8 inches, perhaps even more, long, and surrounded with their own vigorous healthy foliage?

Box edgings may be cut, to give the garden a tidy, neat appearance. This can easily be done with a pair of shears, but some people use a scythe to the sides and clip the top only with the shears. The daisies will have made their appearance on the lawns, which is a warning that it is time to get the mowing machine out. Before cutting, sweep the grass to remove all hard things, such as stones, sticks, &c., which would blunt the knives of the machine, and give the ground a good rolling, which will lay all worm-casts and any other roughness. Attention to these details will add greatly to the life of the mowing machine.

GREENHOUSE.—As the weather improves this will require some sort of shading to protect the plants from being scorched by the bright sun. The best means of doing this is by lath roller blinds attached to the outside of the house, which can be easily rolled up or down as required, and can be removed and stored during the winter. The drawback to this method is the expense. Other forms of blinds can be made of coarse open canvas, which is sold for that purpose. The glass can also be painted with some preparation—one of these called "Summer Cloud" is good; it is green, and can be scraped off in the winter. It can be painted on the outside of the glass, and will not come off after the first shower of rain. Common whitewash is also often used, but this has to be put on the inside of the glass, as it washes off quickly in rain.

Towards the end of the month a sowing can be made of the various *Primulas* for the greenhouse. *Primula sinensis* in several colours, its variety *stellata* in red and white, and *P. obconica*. Sow the seed in pots or pans in soil which has been well watered, place in heat with a piece of glass over the pot. As soon as the seedlings are up remove the glass, and keep them growing vigorously.

Geraniums for bedding out, and any other

bedding stuff which has been wintered indoors, may be put outside to harden off before planting commences.

A batch of Zonal Pelargoniums may be struck. Cut back some of the oldest plants, and if space is limited throw them away, and make cuttings from the fairly strong growths. Rub out all flower-heads, and with a sharp knife cut straight across, but below, a joint: remove all lower leaves, and insert the cuttings in a mixture of loam, leaf-mould and sand either singly in 3-inch pots, or several round a 5-inch pot.

Peaches on walls or under glass will require to be disbudded. This means the removal of some of the shoots. It can be easily seen that in the peach a great many more shoots start to grow than there ever would be room for later on, also that some of these shoots come out on the very front of the branches and others at the back. These front and back shoots must be removed when young, and this can be easily done by rubbing them backwards: they can never be trained in a satisfactory manner. It is the side shoots that must be encouraged, and which will eventually be brought in to fill up and take the place of older wood. A very little practice will soon make disbudding quite a familiar operation, but at first a certain nervousness prevails at the idea of removing any of the young growths in case something should happen to those which are left.

Hints on Growing Daffodils for Exhibition.

By L. J. STUDHOLME, Ballycaghan, Birr.

It is an undisputed fact that many a prize has been won in the garden and lost on the way to the exhibition, hence it behoves every intending exhibitor to commence preparations for the show in good time.

AUTUMN PREPARATIONS.—At planting time the question presents itself as to what indispensable exhibition varieties may be too early or too late for a mid-season show.

To hasten the flowering of late kinds is not difficult, all that is required being a cold frame, if one is not fortunate enough to possess a cool greenhouse.

To prolong the flowering season of early varieties requires more strategy. Many Daffodil growers advocate late planting, but as show flowers are wanted it is unwise to postpone this important operation. I prefer to put down a few bulbs a little deeper than is customary, selecting if possible a north border. There is, however, always the chance of an exceptionally early spring unsettling all one's calculations.

SPRING PREPARATIONS.—Towards the middle of March all beds should be carefully sanded, and it will not be found a loss of time to treat the paths between the beds in the same manner.

As the stems lengthen they must be carefully staked. Neat wire supports can be purchased very reasonably, which greatly facilitate the somewhat troublesome operation. With these two precautions taken it is possible to avoid finding one's best blooms bespattered with mud or snapped off by March winds.

The Red Cups and Poets should be gathered as they open and removed to a shady room with a temperature of 55 to 60 degrees Fahr. If the

atmosphere of the room is inclined to be too dry, lightly sprinkle the floor with tepid water.

Every two days change the water in the vases and shorten the stems (if long enough to permit) by a quarter of an inch.

In this way I have kept flowers perfectly fresh and stiff for nine days.

Gather the remainder of the flowers two days before the show and let them absorb as much water as possible.

PACKING.—To do this well requires a good deal of skill and practice.

It is wise to provide oneself with wooden boxes about 33 inches by 15 inches by 6 inches. The bottom and ends should be made of $\frac{1}{2}$ -inch boards, as it is there that strength is required. In addition to the boxes a good supply of drawing pins and tape should be at hand. Remove the flowers singly from the vases, dry each stem thoroughly, and secure firmly to the bottom of the box by means of the tape and drawing pins. Each flower ought to be fastened down in two places.

With boxes 33 inches long, both ends can be used for the blooms, and the centre left for the stems.

Carry a few extra varieties in case of mishap, and do not forget to pack plenty of green in a separate box.

STAGING.—On reaching the show let the flowers be unpacked immediately and placed in water. With the help of some moss to hold the flowers in the desired position, the actual setting up can be accomplished without much difficulty.

Try to aim at a natural effect, and do not be sparing in the use of foliage.

A few Trumpets and Leedsis should be shown in profile, while the Red Cups and Poets are seen to the best advantage facing out.

Place all the drooping kinds high up, and reserve the bold Trumpets for the ends of the stand. It is well to have the exhibit as representative as possible.

Finally, see that all are correctly labelled, and that each vase contains the requisite number of flowers.

The Greek Anemone.

This lovely Anemone should be grown in every garden, but naturalised under trees in quantity it appears at its best, and the beautiful blue flowers last longer than when in the full sun.

One of the most beautiful forms of this Wind-flower is that known as *Anemone blanda scythica*, introduced from N. Kurdistan. On a sunny day the flowers appear a clear silvery-white, but if one sees them on a dull day the reverse of the petals shows a beautiful metallic-blue. The plants seed with the greatest freedom, and quite a crop of self-sown seedlings usually appear around the parent plants. If the seedlings are grown on they will flower in two to three years. The seedlings usually exhibit great variation—some will be just the ordinary *blanda*, others may be only a washy-blue, while again others will show the beautiful and distinct blue of *Anemone scythica*.

Van Tubergen sends out a very fine form called *Anemone blanda atrocerulea*. This new variety has flowers, which open very early, of a beautiful deep blue, and are half as large again as those of the ordinary Greek Anemone. The double-flowered *Anemone blanda* is also very lovely, but it seems a scarce plant, and flowers rather later than the type. The roots of all are tuberous, and they may be increased by division or by seed.

The Culture of Asparagus.

By ANDREW PEARSON, F.R.H.S., Lota Lodge, Glanmire, Co. Cork.

ASPARAGUS OFFICINALIS belongs to the Lily family, and is to be found growing wild on many parts of the sea coast.

It appears to love a deep rich, sandy loam, and in some alluvial soils adjacent to the sea coast it simply luxuriates. When seen growing under such circumstances by the owner of a good garden where, by reason of the unsuitable soil, Asparagus only exists, there must be a feeling of regret. Although not desirous of claiming that it can be grown well in any soil, there is a method worth trying on heavy clays, which may give fair temporary results, say for two, or perhaps three or more, years of cutting.

Trench the square intended for the experiment, but not too deeply, throw into the bottom of trench old worn pea sticks and garden rubbish of all sorts, at least one foot deep, provided it is capable of acting as drainage.

April is the best month for planting new beds, and plants grown from seed on the spot are likely to give the best results. Of course, they will be one year old when fit for planting. Good young plants may be purchased, but old bought in plants are as often failures as not: the fleshy root is quite incapable of bearing exposure to the air without injury to the crown, so young plants grown from seed—either in seed bed or 3-inch pots—are most suitable. For some time we have used pots plunged in a frame for growing seedlings; they turn out with nice crowns and roots, but this method has not been long enough in practice here to permit us to say if the results are better than growing in the seed bed; in either case the seedlings must be thinned to one plant.

The preparation of the bed in good or bad soil must be of the very best description; in good suitable soil the life of the beds may be a full generation, and in the bad soils, to ensure two years' cutting even, no pains should be spared. In heavy soils the trenched portion, which we assume has been well incorporated with manure in autumn, will again be well dug over, then beds three feet wide be taken out, eighteen inches deep, a heavy coating of long strawy manure placed in the bottom and alternate layers of the staple soil and a mixture of leaf soil and top spit of old pasture, be placed on the bed until it rises in a slightly convex shape about two feet over the soil level, thus the alley, which ought to be two feet wide, will appear like a trench. Natural shrinkage of the bed will, however, reduce that.

The planting should be performed on a calm, sunless day, if possible, and the plants' roots exposed as little as possible to the air. Two lines to the bed at eighteen inches apart will give nine inches from each edge of alley, then the plants placed eighteen inches apart will complete the bed. With ordinary good care and weather the young crowns will push evenly through and grow lustily for the season: a sprinkling of salt will help during the early summer months to strengthen both grass and crown. The month of July will find them requiring assistance by staking, either each crown separately or by placing a few rough sticks through the bed and lacing with cord from stick to stick in a longitudinal fashion. This will prevent the growths being broken off at the crown by high winds, and

the crowns will accordingly benefit and strengthen.

Probably more harm than good is done by cutting down the ripe grass and placing what is believed to be a heavy *protective* mulching over the beds in autumn in such a moist climate as ours. Our method is to leave the grass uncut until the winter is well advanced, when it falls and crumbles with its own weight. This may appear a slovenly way, but there is something of importance in it which is unexplainable, but which, nevertheless, works wonders in its own subtle way.

The beds are merely cleaned and left till spring, when they are pricked over with a fork, the loose soil being placed in the alley; a dressing of ordinary farmyard manure is then spread evenly over the bed, but, contrary to general practice, no salt at this season (March), as it tends to chill the beds, especially in frosty weather. The soil is replaced on the manure, and the beds neatly finished off with spade and rake.

When the young growths appear, if, in the cultivator's opinion, they are strong enough to cut from, a few dishes may be cut, taking care that the crown is not injured in the process. Do not be tempted to cut later than the end of May during the first year of cutting, and even when in full bearing Asparagus will fail if cut later than June. The whole idea of the cultivator should be to encourage strong growth, and consequently a strong crown.

Nitrate of soda in very small quantities spread on the beds during the growing season is a useful manure, and common salt is a cheap beneficial manure, many first-class growers prefer it to any other "artificial." In dry summers a watering of liquid manure will benefit the growths very much.

Perhaps the variety most suitable for ordinary use is *Conover's Colossal*, a fine hardy variety, of good flavour and size. *Sutton's Perfection*, *Giant French*, and *Palmetto* are really fine sorts, and where Asparagus does well any of these will be found satisfactory.

The Hardy Plant Year Book.*

THIS is a timely publication, coming as it does with the lengthening days of spring when hardy plants are beginning to assert themselves.

This, the second issue, is on similar lines to the first issued about a year ago. It contains a list of officers and members, among whom we notice the names of many prominent hardy-plant folk.

Several interesting and instructive articles on hardy plants are given—the notes on new plants of 1912 by Walter Irving being of much value in directing attention to novelties. Mr. W. H. Paine, of Tully Nurseries, discourses on Saxatile Violas, T. W. Sanders on Flower Shows and Hardy Plant Culture, Ernest Horton on New Plants from China, Mr. Malby on the Possibilities of a Small Rock Garden, Mr. Arnott on English Names of Hardy Plants, while other articles appear on Perennial Asters, *The Hardy Plant Journal*, &c.

Several pages are devoted to the rules and constitution of the National Hardy Plant Society, and a series of model schedules for spring, summer and autumn shows conclude an interesting publication. The illustrations of new plants are good and constitute a feature we hope to see developed further in future issues.

* Published by the National Hardy Plant Society, 1s. 6d. post free.

Perpetual Flowering Carnations.

THESE Carnations were formerly regarded purely and simply as indoor plants, but of late years they have been used with considerable success as bedding plants.

The illustration shows a bed, composed of the varieties Duchess of Devonshire, Mrs. H. Burnett and Mikado; the bed was planted in April with flowering sized plants and was photographed in September. For spring planting, plants from 5-inch pots are recommended, as they soon come into flower and will produce good blooms right on into the autumn.

The ground must be well prepared beforehand, and the soil must be free from wireworms and other underground pests: if danger is feared from this source use "Fumigate," one of the best exterminators for the soil.

In the event of dry weather it will be found of the greatest possible assistance to the plants to give them a top dressing of stable manure and occasional soakings of water. Very little care is required, except to keep the plants staked, and, should greenfly or any other insect pest attack them, a spraying with an insecticide will soon get rid of this trouble.

When the plants have finished flowering they may be layered, or cuttings may be taken.

Where the locality is damp and cold it is better to lift the plants in the autumn and keep them in a frame for the winter months.



SAXIFRAGA APICULATA.

THIS charming Saxifraga is one of the prettiest and easiest grown of its family, with the added advantage of being an early bloomer. The soft primrose yellow flowers, borne on delicate stems from 3-5 inches high, rise from pretty rosettes of stiff linear leaves in racemes of 6-9 flowers. Planted in a sheltered, sunny position in the rock garden it spreads rapidly and soon forms a fine carpet, which is attractive even when not carrying flower. The variety alba, which, like the type plant, flowers about the end of March, is an exquisite little gem, and is a pre-eminently suitable subject for the rockery, where it looks more natural than when grown in pots. *S. apiculata* is said to be a hybrid between *S. atrioides* × *S. scardica*.

Gardens for Small Country Houses.*

By GERTRUDE JEKYLL and LAWRENCE WEAVER.

THIS book is concerned with the problems of garden design and also treats largely upon the masonry ornamentations of gardens.

The teaching is mainly by description of gardens and the methods adopted in making the most of variously situated sites: for instance, Owlpen Manor is a hillside garden, about an acre in extent. A plan is given, also an illustration of the house, with surroundings, and various points of view and sectional plans. The garden is treated in a formal manner.

Quite the reverse of this type is Millhead, a garden in Surrey, formerly the site of old buildings. The treatment of Millhead shows and describes how a garden may be terraced in suc-

cessive levels. Although but half an acre in extent, it gives some exceedingly pretty peeps and conveys the idea of a pleasant garden, a wealth of flower, shade and rest.

The following words convey sensible advice: "In the arrangement of any site, the natural conditions of the place should first be studied. If they are emphatic, or in any way distinct, they should

be carefully maintained and not altered. It is grievous to see, in a place that has some well-defined natural character, that character destroyed or stultified, for it is just that quality that is most precious."

Several gardens are described so as to cover many of the problems which crop up in garden planning. There are chapters upon steps and stairways, balustrades and walls, climbing plants; while retaining walls and their planting is an interesting chapter, and prettily illustrated.

Water in the formal garden receives full treatment: while pergolas, gates, garden houses, sundials and seats all receive a fair share of attention. The concluding chapter deals with rock gardens, and the illustrations of these are very effective, while the advice given is sound and practical.

The book forms a large and handsome volume, profusely illustrated and well printed. Its general tendency is a leaning towards the formal types of garden, and to those who favour this style the book can be strongly recommended.

*"Gardens for Small Country Houses." Published at the Offices of *Country Life*, 20 Tavistock Street, Covent Garden, and by George Newnes, Ltd.



Photo. by]

PERPETUAL FLOWERING CARNATIONS

[Young & Co.

Winter Flowering Begonias.

By WILLIAM GREEN.

THIS charming race of winter blooming plants are ever on the increase in popularity. Few plants possess such meritorious qualities, giving such a profusion of bloom in the dull winter months, chiefly of that most predominating colour so much appreciated in flowers, a delicate soft pink. For decorative purposes, also grouping in the warm greenhouse, they have few equals; in both departments we have the desired effect, colour and profusion of flower which nature has produced with exquisite neatness. I take it for granted in the pot section, *Gloire de Lorraine*, which M. Lemoine of Nancy introduced a few years ago, takes place of honour in most instances, but, at the same time, there are a few others that are most attractive and beautiful. They may be divided into two sections—viz., fibrous rooted and tuberous rooted.

I will endeavour to deal with the fibrous rooted section first. Taking the variety *Mrs. Leopold Rothschild*, which sported from *Gloire de Lorraine*, which possesses larger blooms of richer colour and texture than its parent, and to my mind is stronger in constitution. Little difficulty will be experienced in obtaining good plants by the winter months if a clean start is made with healthy stock free from the dreaded mite. Plants that have finished blooming should be cut down as early as possible, given a slight rest, which means withholding the usual supply of water at the roots. Place them on a shelf in a warm house where a good brisk temperature exists, and syringe them frequently, which has a tendency to promote nice soft, short cuttings. When these are ready they should be taken well down at the base and inserted in small pots in light sandy soil and plunged in the propagating frame, where they will soon form roots. When this has been accomplished, potting on in the usual manner must be resorted to. I find a suitable potting compost consists of good fibrous loam with chopped sphagnum moss one-third, and dried cow-manure broken up small with a liberal quantity of silver sand added to keep it open, which is of the utmost importance. During the growing season I have found this section to revel in heat and moisture. Anything in the nature of drought at the roots or atmosphere will prove fatal, the plant becomes sickly, therefore an easy prey to mite. The soil being of such a light nature close attention must be given to watering. As the season advances and the plants commence to show bloom, a little cooler temperature will suit them better, as I find the heat has a tendency to produce smaller flowers of a paler colour. Ventilation must be carried out with care, also overpotting must be avoided. I may add this section make delightful subjects for hanging baskets. With regard to white varieties of the former section I have only seen two worth noting. The first one, *Turnford Hall*, which is far from being a pronounced white, therefore a variety which I think will never become popular. The other, I came across quite accidentally, is a variety called *Mont Blanc*, which has large, pure white flowers; a very attractive plant, with a much more robust habit than the former.

Another fibrous rooted *Begonia* of great merit

is *Gloire de Sceaux*, a variety which deserves far more attention than it receives at present. Its bold trusses of beautiful pink flowers, set in the midst of rich dark metallic foliage not in excess to make it appear heavy, give it a noble appearance, and mixed through the former varieties creates a colour scheme not easily forgotten. This plant requires the same cultural treatment as the former varieties.

For covering pillars or the roof of the warm house we have a few handsome varieties—viz., *President Carnot*, *Carolina*, and *Fuchsioides*. The first named, a very robust grower with handsome leaves, producing its blossoms in huge trusses of reddish coral pink, hanging clear from the plant, giving it a striking appearance. It does extremely well planted out among a few rough stones in loam, with an addition of cow-manure added. The next of merit is *Carolina*, another excellent roof plant—being scarlet is a most desirable change. To see a corner of a house covered with this lovely *Begonia* in bloom is a most imposing sight: here again we have a variety with rich green foliage of medium size and producing its trusses with delightful effect. This plant succeeds best with the roots more confined than the former variety, therefore boxes or pots of a suitable size should be used. The soil should consist of loam and peat, with an addition of sand added. Then we have the old *Fuchsioides*, a free grower: not so handsome as the two former varieties, but still very pretty, producing myriads of its small wax-like flowers of reddish-pink in colour, resembling a miniature *Fuchsia*, which its name denotes. The small tender trails should be allowed to hang loosely from pillar or roof to give it a natural appearance. All three are evergreen and profuse bloomers requiring similar treatment.

Another old favourite of mine is *B. manicata*, a Mexican species, which one seldom sees in our gardens of to-day, but at the same time well worth growing. Its large, handsome, shining leaves produced from the thick stem, makes it attractive in itself, but apart from that it produces long, thin, erect spikes of pretty delicate pink blooms in great profusion. A peculiarity in this species is the hairy nature of the flower stem. Propagation is usually done by division. The plant must be kept confined to pot room to flower it successfully: ordinary potting material may be used.

Now we come to the tuberous rooted section, which has improved considerably of later years. They consist of a charming race of *Begonias*, being mostly double; they are a delightful acquisition. At the present time they are not very plentiful, perhaps, for one or two reasons—the first, they are rather costly; secondly, they are rather tedious to propagate to obtain a good stock. In cultivation they require similar treatment to our ordinary summer flowering varieties, only requiring more heat. When once the bulbs are potted I find the vinery a suitable structure to grow them in, choosing the warmest corner. Care must be taken not to allow thrips to attack them. Should this pest go unobserved the plants will be ruined for the season, but if it does make its appearance measures must be taken to eradicate it by either dipping or fumigating with some approved insecticides. Varieties are are not too numerous at present—a few I am acquainted with are *Ensign*, *Mrs. John Heal*, *Winter Cheer*, and *Julius*, all rich double pinks.

The Month's Work.

The Flower Garden.

By JOHN WHYTOCK, Gardener to Colonel Crawford, Crawfordsburn, Co. Down.



SPRING bedding will be looking very gay this month, as most of the plants will be in flower. Any staking of Tulips or Hyacinths that is required should be attended to and the edges of beds trimmed up, and any decayed leaves or rubbish that has blown on them should be cleaned off.

LAWNS.—The grass will be growing quickly now, and should be cut with a lawn mower, previous to which it should be gone over and well swept to remove any gravel or other dirt that may have got on it. Any bare patches of the lawn, or places where the grass is thin, should be irritated with a rake and a topdressing of fine soil given and sown down with a good mixture of lawn grass seed. Tennis and croquet lawns should be kept constantly rolled, so as to get a good firm surface.

ROSES.—Early in the month all dwarf Roses should be pruned, starting with the Hybrid Perpetuals, and finishing up with the Teas and those that have been newly planted. Hybrid Perpetuals and Hybrid Teas should be cut pretty hard, especially if large blooms are required. Teas need only the dead and unripened shoots taken away, and the points of the well-ripened shoots cut away. After they are pruned the beds should be given a good topdressing of some bone-meal and good artificial manure, which should be lightly forked in, taking care not to damage the surface roots too much in the operation.

SHRUBS AND TREES.—Any of the Conifer family and evergreen shrubs such as Hollies, Andromedas, Berberis, Rhododendrons, &c., that require planting or transplanting, should be done this month. After planting, if the soil is inclined to be on the dry side, they should be given a good watering. Any large specimens either of Conifers or evergreens that require transplanting should have a good trench dug round them about 3 feet from the stem, and the trench filled in with some good soil; this will encourage fibrous rooting, and the plants can be safely removed the following season.

VIOLETS, out of doors and in frames, which have flowered should be lifted and the side shoots taken off, with a bit of root if possible, and planted in beds out of doors which have been previously made ready by being well dug and manured. In planting a good lot of sand should be worked in about the roots.

ANNUALS that were sown last month in heat will be ready for pricking off into cool frames. They should be kept close, and daily given a light spraying until they start to grow, when air should be gradually given. Bedding plants, such as Geraniums, Lobelia, Heliotrope, Iresine, &c., should be put out into cool frames to harden off.

THE ROCK GARDEN will be interesting at this time, a good many of the subjects coming and

are in flower, such as the mossy section of the Saxifragas, Morisias, Iberis, &c. A careful watch will have to be kept for snails and slugs at this time just as the plants are starting into growth, or else the early growth will soon disappear. Such plants as the Dianthus, Aster alpinus, Campanulas, &c., are especially liable to attack. The best means to protect some of the choicest of the plants is to put a zinc collar around the plant and gently press it into the ground, leaving about three inches above the surface. Any winter coverings that have been over any of the more tender plants should be taken away, and the surface soil round them given a pointing with a fork.

The Fruit Garden.

By D. MCINTOSH, Gardener to Alderman Bewley, Danum, Rathgar.

EARLY VINES.—As soon as the berries are seen to be swelling again after the stoning process, a temperature 5° higher, day and night, should be maintained. Examine the borders, and, if in need of moisture, give a watering of clear water, and immediately after repeat the operation, but this time adding one gallon of liquid farmyard manure to every two gallons of water. On warm days frequent syringings of the borders, paths and bare spaces is beneficial to the vines, and it is essential that these spaces be thoroughly damped before closing up the house in the afternoons. Whenever the bunches show signs of colouring, more ventilation will be needed, leaving a little on all night, but extra fire heat must be used to keep up the requisite temperature. Admit a little air at the front before the thermometer rises in the morning. This will prevent a stagnant atmosphere, which so often at this stage accounts for the cracking of the berries.

MID-SEASON VINES.—The bunches will now be coming in flower, so, at the first available opportunity, tie the shoots down to the wires. The sun will then shine better on to the bunches before the leaves are re-arranged, and thus assist fertilization. Maintain a warm airy atmosphere and tap the rods about one o'clock on bright days, using the feather brush when the weather is dull. The bunches should be ready for thinning a fortnight or so after the berries are set. It is wise to commence this operation early, so that those which are left will receive all the nutriment.

INDOOR PEACHES AND NECTARINES.—Most of these trees will have set their fruits by this date, and it will now be necessary to examine the borders as regards watering. If in need of moisture, give sufficient water to thoroughly saturate the roots. Syringe the trees, morning and afternoon, with water that has been exposed to the air. Frequent syringings help to swell the fruit and increase the growth of the tree, and are essential to keep red spider in check. Many trees set an over-abundant crop of fruit, which, if allowed to remain, would only be small and poor, and the tree would be seriously impaired for the following season's crop. Therefore, thinning is very necessary, and should be commenced when the fruit is about the size of an oak apple. In thinning out the fruits, which should be done at intervals of a few days, the health and vigour of the tree must be borne in mind. It is a mistake to overtax the strength of a tree, because the result in the end will be unsatisfactory.

POT STRAWBERRIES.—About the middle of the month, if all has gone well, the first batch of

strawberries should be ripe. From the time the fruits begin to colour, gradually inure the plants to a more airy atmosphere, and allow them to receive the full advantage of the sun. This will improve the quality and flavour of the fruit, which I may add is often lacking in early forced strawberries.

OUT-DOOR STRAWBERRIES.—If these plants have not already received attention this neglect should be rectified at once. Cut away all dead and decaying leaves, and pull out or hoe up any weeds that are growing among the plants. If the plants are in a weak condition, give each one a supply of farmyard liquid manure. Allow the soil to dry for a few days, after which time the ground between the rows should be lightly forked over, breaking it up fine as the work proceeds. Towards the end of the month mulch all bare spaces around the plants with half-rotten farmyard manure. The rains which follow will wash in the feeding properties contained in the manure, leaving the strawy matter nice and clean for the reception of the strawberries when developing.

HARDY FRUIT.—All bush and pyramid trees should have the surface soil regularly stirred. If the ground has got too hard, owing to treading upon it in wet weather during pruning time, it will be better in the first place to have it lightly forked over. There is nothing that tends to encourage root-action more rapidly than regular surface cultivation. Many pears and plums on walls will be in flower. Spare no effort to obtain a good set, which can easily be ensured by paying close attention to fertilization of the flowers. Attend to the watering of trees situated in dry positions. If allowed to get dry they will assuredly suffer from the evil effects of various insects, which, to no small degree, weakens the constitution of the tree for the current and also future years.

The Vegetable Garden.

By J. G. TONER, County Instructor in Horticulture, Co. Monaghan.

WHITE TURNIPS.—The turnip is not a very nourishing vegetable, but it stands in constant favour for all that. It is no easy matter to get the early crop forward unless the weather be kind and mild, and very often it is not. Gardeners of all kinds know that to their cost. To grow turnips with success at any season an extremely light and rich soil is required. It is all the more important as regards the first sowing. When the growth of turnips lags on its way a stringiness and toughness results; there is little of the "melt in your mouth" order about them, consequently temper, taste and digestion are sorely tried. As we cannot make the weather, let all possible pains be taken with the soil. Shallow drills nearly filled with well-decayed manure suit perfectly; or slightly raised beds half soil and manure will be found to answer. If a little superphosphate is shaken over the manure before covering with soil they will do better still. Early Milan and Snowball are suitable varieties to sow now.

SUCCESSIONAL PEAS.—According to demand, these must be sown at intervals of three or four weeks, so that, as far as possible, there may be an unbroken supply. The second early and main crop varieties are heavier bearers than those we depend on to fill our dish first. The double digging of the soil will enable the roots to penetrate very deeply, and they will therefore be less affected by hot weather, should such a phenomenon be seen, and further, will have a wider and

deeper range for gathering food. The largest pea known is Quite Content, the pods are immense, and it is a goodly grower too, getting up to five or six feet. Indeed last season it far exceeded the height given, but that was probably due to the excessive rain. A grand dwarf variety to sow now is Daisy. For small gardens it, verily, is the pea.

HOTBEDS.—Many will require these for the culture of melons and cucumbers. Good fresh stable manure, together with leaves, are the proper materials to use. Usually the stable refuse must be used alone. At any rate it should be heaped together to ferment, and several turnings will be required before it reaches a fit state for use. When hotbeds are made up without this preparation the heat generated is very excessive at first, but it soon cools off. A well made bed will retain its heat for quite three months.

FRENCH BEANS.—These make a very appetising and tender dish, but they are even more tender in another sense. Frost quickly brings their career to an end. Master Jack can be outwitted, however, no matter how many degrees he can claim. Seeds can be sown in pots or boxes placed in the greenhouse or frame and duly transplanted when the season permits to the warmest position in the open. No attempt should be made to hurry on the growth, the idea being to have stout plants ready to put out when some warmth comes along. There are, perhaps, sunny, warm gardens, where a line or two may be sown in the open; should it prove a failure the loss will be slight. The drills may be eighteen inches apart, and the seeds put in a couple of inches deep and the same apart. Should germination be good the thinning can easily be done. Ne Plus Ultra and the Canadian Wonder are two good ones.

CAULIFLOWERS.—There is a huge difference in the flavour of well-grown cauliflowers and the coarser but very necessary broccoli. Early Erfurt and Early London cauliflowers are the kinds for planting this month. It will not be wise to plant many, for they become fit for use almost simultaneously—that is, each variety does. Veitch's Autumn Giant can be made use of later on to prolong the supply. At eighteen inches apart they grow to a nice table size. Rich soil, well tilled, they must have, otherwise they will "button" or form premature flowers that will be too small for use.

CARROTS.—Fairly rich ground made as fine as possible by repeated diggings, but not containing freshly-added manure, are the conditions suited for cultivating carrots. Some soils are naturally very poor, and in such case feeding material must be added. If placed a spit down tolerable roots can be produced. Altringham is a large root and a good standard variety suitable for deep soils. James's Intermediate might prove more generally successful, for while fairly thick it does not grow very long. What are called Horn carrots are extremely short, but of fine flavour, and might be selected for very shallow soils. Sow about the middle of the month in drills fifteen inches apart and about three-quarters of an inch deep. Half the distance apart will do for the small variety.

BET.—For mixing with salads this is indispensable. The soil may be in the same condition as for carrots. It will be better, however, not to manure. The roots will grow large enough without it. Sow a few seeds at intervals of eight inches along raised drills covering about one and a half inches deep.

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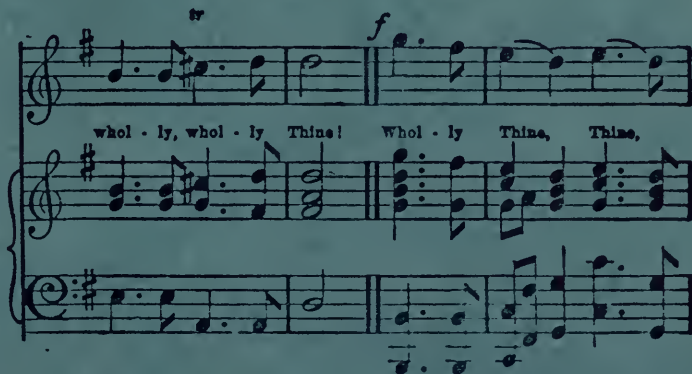
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Hardy Water Lilies.

By SIR F. W. MOORE, M.A.

Most good gardeners keep notebooks, and carefully consult these books during the progress of the season, adding to or altering the matter according as circumstances, or changing conditions, require. The careful keeping, and constant consulting, of a notebook is not a sign of ignorance of the principles or requirements of our craft; on the contrary, it denotes a careful and well-ordinated mind, and a determination not to omit attention at the proper moment to details, great and small, on the careful observance of which much of the success of the coming season depends. Reference to notes of work to be done at this season are unfortunately for our peace of mind very numerous, and many of us have to give anxious thought as to how to "get it all in." One note stands underlined in red, "clean ponds," "attend to and divide hardy Water Lilies end of April," and a little further on "plant new varieties first week in May." The mere reading of above notes awakens in the mind a summer scene, cool and peaceful, refreshing and stimulating, for assuredly there is no summer scene in the garden more beautiful than that of a quiet sheet of water in a suitable position, and with suitable surroundings, a blaze with the chaste and beautiful flowers of the modern hardy hybrids and varieties of Water Lilies. Thirty years ago such a picture would have been an impossibility, but such has been the progress in the cultivation of Water Lilies, and in the production of new and meritorious varieties, that it is now within the reach of every one at a very moderate cost, provided always the water is available. The credit for this advance is undoubtedly due to the late M. Bory Latour Marliac, of Temple-sur-Lot. He first seriously took up breeding *Nymphæas*, and his earlier productions, as well as some of the later varieties sent out by him, still stand unrivalled for general utility and beauty. Others have followed in his footsteps, but so far

I fearlessly affirm, no one has overtaken him, although varieties of sterling merit have been produced by his fellow-countryman, Lagrange, and by Dreer in America. The first four planted in the pond at Glasnevin were *Nymphæa Marliacea candida*, *N. M. rosea*, *N. M. carnea*, *N. M. chromatella*; that was twenty-five years ago, and the illustration shows in the foreground these same plants as they are at the present day, vigorous and floriferous, in the same place they were originally planted in, and from which they have never been moved. They are well seen in the foreground of the illustration. This is high testimony to the general value of any plant from a gardener's point of view, and I can add to the testimony by stating that I still invariably recommend these four as amongst the very best varieties for planting in large sheets of water over two feet in depth, adding to them *N. colosseae*, and *N. Gladstoniana* to make half a dozen.

Several papers have appeared from authors of repute, treating of these plants, and giving cultural details: also naturally extolling their merits, but hiding their shortcomings, for, unfortunately, such they have. The most serious probably is that on bright days the flowers close between three and four in the afternoon, and remain closed until the following day, thus hiding most of their beauty at a time of day when busy people only get an opportunity of enjoying their gardens. Sun and brightness seem essential for the highest quality and greatest beauty of all varieties of hardy *Nymphæa*, hence it is quite useless planting them in dark or shaded ponds where the sun's rays cannot get free access to them. Rank foliage, a few poor flowers there will be for a period, and the plants will gradually die out. An interesting fact is, that if the flowers open well in the forenoon, and if the day then becomes wet and gloomy, although the rain may cease, the flowers remain

LIP
NEW
BOTANICAL

fully expanded until dark. Apparently they object to close with the rain drops inside the petals.

The cultivation of hardy Water Lilies is simple, perhaps hence some of their popularity. Two feet of water is quite sufficient for any of them, too much for several. Only the most vigorous seem happy in more than two feet of water, many will die if planted in a greater depth, and quite a dozen, including some of the most charming varieties, will flower in about fifteen inches of water. The best medium in which to plant is good rich mud taken from an old pond or ditch. If the pond has already a mud bottom no other material need at first be added: if the bottom be stony or gravelly, then good beds of mud, or of old loam with a little clean cow manure through it, must be prepared for the young plants. In cement-bottomed tanks or small ponds it is best to place the plants in flat or shallow baskets, and to sink them where required. A piece of wire or tarred twine should be placed over the plant close to the crown to secure it in its place, and some stones should be placed on the surface of the soil. If these precautions are not taken the plants, so carefully handled and planted, with the lumps of the soil in which they were planted, will frequently, after a day or two, be found floating on the surface of the water. Similar precautions must be taken when planting in mud, or in prepared beds, in larger ponds. A brick, or a piece of flat stone, should be firmly secured to the rhizome, which will retain the plant in position until the roots have taken hold of the soil, and so automatically anchored the plant from which they spring; after that the difficulty will be to remove it, so firmly do these roots take hold. The study of roots is an all important one for the gardener. Observation of Water Lilies shows that from early April to June new roots are developed rapidly as the new leaves and flower buds develop, and as the rhizome elongates, at which season also many of the older roots die away, having faithfully served their functions as collectors of food materials during previous years, and as anchors during the winter. This gives the clue as to the time to plant, but the later it is deferred the better, as the temperature of the water has also to be taken into consideration. Nothing is gained by planting out small weak pieces, which probably have been forced on under glass, earlier than the middle of May. By that time the water, under the influence of the increasing strength of the sun and the warmer nights, will have appreciably risen in temperature, and the plants are less liable to get a check from which it generally takes them a long time to recover. Planters will also find it advisable to establish young

plants under favourable conditions before planting them in their permanent quarters. They can be put in baskets of soil and kept in tubs in a bright greenhouse, or in a warm sunny corner, covered with a square light from a frame, until the roots are well at work. Such precautions are not necessary where divisions are taken from good strong old plants in ponds. Strong crowns, which are quite hardy, can be planted out at once, and they will soon make a new colony. Where happy most of the hardy Water Lilies increase freely by branching, and eventually tend to become crowded, with the result that quantities of leaves are produced which, by pressing against each other, raise themselves above the surface of the water, and quite smother the flowers. The leaves are, no doubt, beautiful, but the flowers are more beautiful, and, as both flowers and leaves are required to make a perfect picture, judicious thinning has to be resorted to when the clumps become too crowded. The weaker crowns can be cut out with a large strong knife, and when severed, if firmly and quietly pulled, sufficient roots to support life can be got away attached to them. In ponds where there is deep rich mud, or where too much cow manure has been given, even comparatively young plants soon get crowded and produce numerous and large leaves and but few flowers, or else the leading buds become what is technically known as "fasciated," and produce a large round rosette-like bud, with quantities of small leaves and abortive flowers.

It is such plants especially which require attention in the way of thinning and occasional disturbance to check them. On the other hand, where quantities of large leaves and flowers are produced, even by plants living in water, a sustaining diet is required. Therefore, when the bottom of the pond is gravelly, or when ponds with cement bottoms have to be utilised, care must be taken not to let Water Lilies, particularly the more vigorous growers, suffer from starvation. A little fresh material must be provided during April or May, and there is nothing better than clean cow manure without any straw or litter. The Water Lilies are essentially representatives of still life: they are seen to greatest advantage in a quiet pool where there is but little movement in the water. They do not thrive in running water—in fact it is useless trying to establish them in running streams where the movement is rapid. Only one other cultural detail remains to be dealt with—namely, cleanliness. Intending growers of these plants must remember that the conditions they provide for their Water Lilies are also ideal conditions for the rampant growth of aggressive water plant tramps and vagrants, in search of a

quiet resting place and an easy life. On no account must these be permitted to establish themselves. Two thorough cleanings at least, and often three, in the course of a season are necessary. In April all water plants which appear round the Lilies, except such clumps of Bulrush, Mace reed, Sweet Flag, Water Plantain, or Arrow Head, which may be required for effect, should be removed with a drag, or with

useful selection of proven varieties, with plenty of variation in colour and habit, and which have the great recommendation of being cheap and good. If the list be too extensive consult a descriptive catalogue, and purchase those which seem most suitable for individual tastes and requirements.

List No. 1 (for large sheets of water which may be 36 inches in depth or shallower).—Colossea,



WATER LILIES AND JAPANESE IRISES
In the Glasnevin Botanical Gardens.

a long coarse-toothed rake, leaving the water clean and free from water weeds, using the term weeds in the broad sense of all plants inimical to the welfare of the Water Lilies. In June the operation must be repeated, and perhaps again in August. We do not grudge the labour given for weeding to our herbaceous borders, Rose beds, or vegetable plots, as we recognise how necessary it is to weed if we hope for good results. It is equally important and necessary for the welfare of the Water Lilies.

For beginners the following will be found a

Gladstoniana, *Marliacea albida*, *Marliacea carnea*, *Marliacea chromatella*, *Marliacea rosea*, *tuberosa Richardsoni*, *tuberosa rosea*.

No. 2 (for smaller ponds, water not exceeding 24 inches in depth).—*Atropurpurea*, *Froebeli*, *gloriosa*, *James Bryden*, *Robinsoni*, *Wm. Doogue*, *Wm. Falconer*, *fulva*, *Paul Heriot*, *odorata*.

No. 3 (for small ponds, water 15 to 24 inches).—*Ellisiana*, *odorata*, *Luciana*, *Laydeckeri rosea*, *Laydeckeri rosea prolifera*, *fulgens*, *pygmæa*, *pygmæa helvola*,

Spring Frosts.

By J. ADAMS, M.A.

OF the various hindrances to the work of the successful gardener there is probably none of greater consequence than late spring frosts. The various methods of protecting plants against these late frosts are well known, and it is not my intention to refer to them here, but rather to direct attention to the desirability of compiling records of the occurrence of frosts in certain districts throughout a series of years. If, for example, a ten years' record shows that frosts have occurred in a particular district several times during the month of May, then an alert gardener knows that he has to be on his guard, and is not likely to be caught napping. Knowledge in this case is power, and to be forewarned is to be forearmed. In fact, for each district we want an answer to the following questions :—(1) How often during the months of April and May have frosts occurred, and on what dates ? (2) What is the latest date for frost to occur in each year ? The longer the period over which the records extend the better, but a ten years' record should be sufficient to give a fair idea of the probabilities for the future in each district. The full consideration of the various factors which influence the temperature of the air is too large to be gone into at length here, but the following are some of the more outstanding features :—

(1) The temperature falls as the distance from the equator increases. This rate of fall would probably be nearly uniform if the land surface were perfectly flat and there were no ocean currents or winds. But the presence of mountains and large bodies of water and the direction of air currents have a profound influence on temperature as well as distance from the equator, so that it is only true in the general sense that the temperature falls as the latitude increases. To take a concrete example :—In the month of January the mean temperature of North Antrim is about 41° F., while that of South-west Cork is 44° F. ; in the month of July the mean temperature of North Donegal is 58° F., while that of Wexford is 60° F.

(2) The temperature falls about 1° F. for every 330 feet above sea level. It therefore follows that the higher the elevation the lower is the temperature, and consequently there is greater probability of frost. Unless other influences come into play a place only 50 feet above sea level will, as a rule, have a temperature 2° higher than another place near it at an elevation of 700 feet. But there are some exceptions to the rule.

(3) An exception to the foregoing statement will be found in valleys surrounded by low hills. The side of the hill may have a higher temperature at night than the bottom of the valley. This may be explained in the following way :—If two liquids of different densities are in turn poured gently into a vessel the heavier liquid will settle on the bottom and the lighter will rise to the top. Masses of air of different density will behave in the same way. As we have seen, the temperature falls the higher the elevation above sea level. The air on the side or top of a hill is therefore slightly cooler by day than the air in the valley, a fact which has often been verified by experience altogether apart from the reading of the thermometer. But cold air is heavier than warm air. The draught produced up a chimney is a familiar example of this, the hot air rising up the chimney and cooler air passing in at the bottom to take its place. At night, therefore, there is a steady flow of cool air from the higher elevations down the sides of the hill into the valley, and before the sun has risen the air at the bottom of the valley on a clear, still night may have fallen below the freezing point, while a little higher up the air may be several degrees warmer. If a wind is blowing, however, colder and warmer air become mixed up, and there is little difference between the temperatures of the hillside and the valley. It is probably on this account that fruit plantations are more successful if planted on a gently sloping ground, although the question of drainage also has something to do with it. The Americans distinguish between a frost and a freeze. Frosts occur on still, clear nights, and are more or less local ; freezes are often accompanied by winds, are general or even Continental in range, and are not marked by the whiteness of frost.

(4) A region close to a sheet of water is less liable to frosts than a district not so situated. The depth of the water in this case is more important than its area. A body of water is not so easily heated as a mass of rock or a land surface, and, on the other hand, when once heated it does not cool down so rapidly. Consequently on a still, clear night in spring when the temperature of the land may fall below freezing point that of the water and of the air above it will be several degrees higher. The influence of the water will also be felt over a belt of land some distance from its margin whose width will depend on the elevation of the land bordering the water, and also on the extent of the water surface and on its depth, if an inland lake. Therefore it will appear that a strip of land bordering a lake may be quite free from

late frosts. A good example of the ameliorating influence of a large water area is furnished by the Peach belt, several miles wide, on the southern shore of Lake Ontario.

As the air over a lake is cooler by day than the air over the land, the vegetation around the lake and for a short distance inland will be retarded in spring, and thus the danger from late frosts is still further lessened over this area.

There are many large lakes in Ireland where this influence ought to be felt, particularly round the shores of Lough Neagh. How far the influence of the lake extends inwards I am unable to say, but it is noteworthy that there is a good deal of fruit grown in that neighbourhood.

So much for general considerations. It now remains to refer to some of the figures recorded from different localities, but the following facts should be borne in mind :—(1) The figures refer to shade temperatures, and, as is well known, the actual temperature on the grass where the thermometer is fully exposed is several degrees lower than the shade temperature. From the gardener's point of view the grass temperature is much the more important of the two, as it represents the actual amount of cold which the plants have to bear unless protected in some way. (2) The temperature of a place on the sea coast is usually higher than that of a region further inland owing to the sea being warmer than the land in winter. (3) The temperature of a town is usually considerably higher than that of the country in the immediate neighbourhood, owing to the heat given off by numerous chimneys, and also to the smoke hanging like a cloud over the town.

APRIL FROSTS.—As the result of a large series of observations in different places, it may be said that frosts are liable to occur during this month in all parts of Ireland. In view of what has been said above, it will be evident that an inland locality will be more liable to frost than one near the sea. If we select Birr Castle as typical of inland localities generally, frosts have occurred there in April every year during the period 1900–1911. The number of frosty nights during the month varied from 1 in 1900 to 9 in 1906 and 9 in 1908, and the lowest temperature recorded in April during these 12 years was 23° in 1908 and again in 1911.

MAY FROSTS.—During the years 1886–1910 the lowest May temperature recorded for Malin Head was 35° and for Blacksod Point 34° . During the years 1876–1910 the lowest May temperature recorded was 34° for Valentia, 35° for Roche's Point, 28° for Birr Castle, 33° for Donaghadee.

Records of frosts in various places in Ireland

during the month of May from 1882 onwards are as follows :—

1882,	30.9°	at Killarney.
1883,	29.1°	..
1884,	none.	..
1885,	27.5°	at Killarney.
1886,	none.	..
1887,	30.2°	at Killarney.
1888,	1889, 1890, 1891,	none.
1892,	29°	at Killarney.
1893,	none.	..
1894,	31.3°	at Ardgillan (Co. Dublin).
1895,	32°	at Killarney.
1896,	28.5°	..
1897,	30°	..
1898,	30.8°	..
1899,	30.6°	.. 30° at Cahir.
1900,	1901,	none.
1902,	31.3°	at Enniskillen.
1903,	31°	at Cahir.
1904,	1905, 1906,	none.
1907,	30.2°	at Cahir.
1908,	none.	..
1909,	30.6°	at Ardgillan, 30.2° at Cahir.
1910,	1911,	none.

The full list of May frosts at Birr in 1909 was as follows :—2nd May, 30° ; 13th May, 32° ; 14th May, 29° ; 15th May, 29° ; 18th May, 32° .

It will be evident from the above figures that places on the sea coast are practically free from May frosts. The figures also show that during the 30 years from 1882 till 1911 May frosts have occurred during 15 separate years in some part of Ireland.

The date of the last frost varies very considerably in different years. The following are the figures for seven years at Dublin :—

1843,	13th April.
1844,	18th May.
1845,	10th ..
1846,	18th ..
1847,	15th April.
1848,	29th ..
1849,	20th ..

Lastly, it is worthy of note that a temperature of 32° occurred at Birr Castle in June, 1881.

NOTE.—It is very important in making observations on temperature that the thermometers used should be compared with a standard instrument. A minimum thermometer which I purchased from a well known firm invariably reads as much as 5° too high.

Potentilla Vilmoriniana.

By a printer's error in our last issue the illustration on page 49 of *Potentilla Vilmoriniana* appeared as *P. Kilmoriniana*. Several years ago this beautiful shrub was introduced from China by Mons. Maurice de Vilmorin, and it is proving hardy, free-growing, and free-flowering in this country, but requires full sunshine to bring out its silvery foliage. In habit it is similar to *P. fruticosa*, our native shrubby Cinquefoil, forming a bush three to four feet high; but the flowers are a pale sulphur-yellow, with a deeper coloured base.

Seed Testing.

IRELAND is not infrequently regarded as being a backward country, but in many respects this idea is an erroneous one.

In all that pertains to that fundamental art-science, Agriculture, Ireland indeed is now well to the forefront, and in the important matter of the provision of facilities whereby the quality of agricultural seeds can accurately be gauged, and at a practically nominal cost to the farmer, she is, and has for years been, far ahead of her neighbour Great Britain.

In the year 1900 a strong departmental committee was appointed by the English Board of Agriculture to enquire into the trade in agricultural seeds in the British Isles, and in the following year a report was issued in which, amongst other things, the establishment of a seed testing station was recommended. Up to the present, however, no action appears to have been taken to give effect to this recommendation in Great Britain, although there are rumours that, following the Irish example, Scotland and also England may shortly have such stations.

Scarcely six months was allowed to elapse, however, after the establishment of the Irish Department of Agriculture in 1900 before that body took steps to make arrangements for having seeds tested, and the present Irish Seed Testing Station, during the twelve or thirteen years of its existence, has tested many thousands of samples of seeds, and has been of much service to the country in assisting in the gradual, and perhaps somewhat slow, but none the less substantial, improvement which has been and is taking place in the quality of seeds used by farmers in Ireland.

In 1909 the Weeds and Agricultural Seeds (Ireland) Act was passed, and the carrying out of the provisions of this Act entailed a very considerable addition to the activities of the Seed Testing Station. Formerly situated in the Botanical Department of the National Museum, then migrating to the old Royal College of Science, the Station, which has recently undergone considerable reorganisation and extension, in order to enable it to cope more effectually with the increased demands made on its services, is now housed in much more suitable quarters in the splendid buildings of the new Royal College of Science in Upper Merrion Street, Dublin.

We give an illustration of the principal laboratory in which the main work of seed testing is carried on, a fine, well-lighted room some twenty-five by fifty feet, fitted with all modern conveniences for scientific work.

At a seed testing station, as is well known, the seeds are subjected to tests for—(a) *purity*, and (b) *germination*. The purity test is determined by weight, all the seeds not of the kind

named in the designation of the sample, such as weed seeds, &c., being removed from a weighed portion of it, together with other impurities, such as sand, dirt, or debris of any kind. By weighing these impurities and making a simple calculation the percentage of purity can easily be ascertained. The percentage of germination is determined by placing a given number of the pure seeds (at the Irish station this number is never less than five hundred, and in certain cases is nine hundred) under optimum conditions for growth, and counting how many of them sprout or germinate.

The so-called "true value" or "real worth" of a sample is the number obtained by multiplying together the percentages of purity and germination and dividing them by one hundred.

These tests are carried out at the Irish station for the purely nominal fee of threepence per sample for farmers, while for seed merchants the fee is two shillings per sample. Full details of seed testing and the regulations governing the utilisation of this station will be found in Leaflet 59 of the series published by the Department of Agriculture, which can be obtained free on application to the Secretary.

Seed testing stations have been established on the Continent of Europe for many decades, and some of them—notably the Swiss one in Zürich—make a point of testing samples for clients of all nationalities.

Although in the main the principles adopted at the best of these Continental stations are the same as those in vogue at the Irish station, yet there are two important respects in which those of the latter station do not coincide with Continental practice.

The first of these is in connection with the tests made of the larger and commoner grass seeds. At most Continental stations in testing such seeds for purity not only are the real impurities, such as weed seeds, dirt, &c., removed and weighed as such, but so are also all the grass seeds which do not, or appear not to, contain a kernel or caryopsis. Since the germination test is carried out on the pure seed after the impurities have been removed, it follows that by the Continental method the germination test is made on *selected* seeds, and that therefore (particularly in relatively inferior samples) the percentage of germination will be higher than if the sample were tested by the Irish method. By the Irish method the germination test is carried out on the grass seed just as it is sold to the farmer after only the real impurities have been removed, and the result gives a fairer indication of the quality of the seed in the matter of germination. Of course as regards purity the Continental method gives lower percentages than the Irish does.

The second point is in the matter of controls,

At the Irish station there is tested side by side with every sample under examination a portion of a sample known as a "control," the germination of which is already known from previous repeated testings. If the control does not come up to its reputation when germinated alongside of the given sample the test is discarded and a fresh one instituted. The "control" sample therefore affords tangible and convincing proof

during the administration of the Weeds and Seeds Act referred to above show clearly that in those counties in Ireland where the farmers avail themselves to the least extent of the facilities for acquiring accurate information about the seeds they are using, based on actual tests, the sale of inferior, and in too many cases of absolutely worthless, seeds is most prevalent.



VIEW OF THE PRINCIPAL LABORATORY OF THE IRISH SEED TESTING STATION
IN THE NEW ROYAL COLLEGE OF SCIENCE, DUBLIN.

of the perfection, or otherwise, of the conditions under which the germination test is being made. Owing to the fact that the best conditions for the successful germination of the various kinds of seeds are now so thoroughly well known from years of experimental work, it is found in practice that the failure of the control is a thing of the utmost rarity, nevertheless its employment is a valuable safeguard against unforeseen and exceptional contingencies.

Every year more and more use is being made of the Irish Seed Testing Station; and it is interesting to observe that the data obtained

One by one the farmers in these counties will in time probably awake from their slumber and see what losses they are suffering, and then perhaps we may hope to begin to realise the ideal for which we are striving—namely, that instead of being known, as certainly was formerly the case, as a country for which the most rubbishy seeds were regarded as good enough, Ireland may be the one country in the world, perhaps, where none but the very best seeds will find a purchaser, for the old saying still holds good—"The best seeds procurable are never too good."

Hints to Amateurs.

By R. M. POLLOCK.

SWEET PEAS sown in the open will have to be carefully watched and protected against slugs and birds. Lime and soot mixed can be spread round the clumps, but an expedition towards evening on a damp day will be more satisfactory, as then the enemies can be caught and disposed of. The Sweet Peas raised in pots will be ready for planting out, if not already done, and this should be done carefully, disturbing the roots as little as possible when taking them out of the pots. These will, of course, already have their first stakes, but the stronger and permanent supports must now be given. This can be done in various ways, but where obtainable the

These should, as far as possible, be grouped in colours, as then a far better effect can be got from a comparatively few plants. If there is no room for them in the borders, any spare corner with some good manure mixed with the soil will do for them, and they will be invaluable for picking in the autumn.

Dahlias may be put out in their flowering quarters too, and here again good rich soil is a necessity, as Dahlias are gross feeders. It is advisable to place a stake in the hole when planting, as this prevents any injury to the tubers, and a good strong stake is essential. Watch these young plants for earwigs, slugs, or snails, as they have a particular weakness for the young green shoots and leaves.

Where Daffodils are planted in beds for the purpose of cut flowers, and which are not lifted regularly every year, these beds can be made quite bright by sowing or planting Annuals between the lines, which thus prevents the dull appearance of empty beds during the summer months. It is a good plan to note what varieties are wanted, or where they are too crowded in the borders. Any worthless varieties should be removed as soon as they go out of flower, as it is very difficult when the busy season of autumn comes round to remember where a clump was wanted, or where a worthless one was that was only fit for the fire. This remark not only applies to Daffodils, but also, and more so, to Tulips, where the colours are far more vivid, and where they are more likely to clash. In the rock garden too a notebook is essential. No plant should be planted out in any part of the garden unless its height, colour and habit are known. Work done without such information may with luck turn out all right, but it may also remain an eyesore all the summer, and have to be redone later on.



Photoby]

OENOTHERA MACROPHYLLA.

C. F. B

(See page 73.)

ordinary branched pea stake cannot be beaten, and look less formal and stiff than netting, for private garden work.

The first lot of hardy Annuals sown in the open ground will be ready for thinning, which should be done with discretion, and done in two sections. Give one thinning now, taking out small weak seedlings where they are obviously too crowded, and later on, if necessary, remove a few more.

Annuals for flowering in late August and September may be sown in the open ground. Sometimes a few extra patches of bright colours, especially reds, are a relief among the yellow which predominates among the late summer and early autumn flowers.

Towards the end of the month biennials, such as Wallflowers, Sweet Williams, Canterbury Bells, Honesty, Columbines (Aquilegias), Foxgloves, &c., may be sown in the open, for transplanting in the autumn. Any Antirrhinums and Sweet Williams raised in boxes may be planted out in their permanent quarters. Hardy outdoor Chrysanthemums may also be planted out.

All bedding out may be started as soon as the beds can be cleared of the spring stuff. The scheme of colour should have been arranged months ago, and whatever material necessary, grown on for the purpose, which should now be hardened off and fit to transplant. It is best to choose a dull day for starting work, and the actual planting will be made much easier if the beds are given a thorough watering a short while before operations commence, as it is much easier to firm the plants in the ground when the soil is damp. Wherever the bedding is done in beds which are cut in grass, the latter should be saved as much as possible. All pots, boxes, pans, &c., in which the plants are might be placed on boards or matting put down for the purpose, and the same might also be put down round the beds; this would save the grass and avoid the very unsightly appearance of mud-stained and trampled edgings which, if on poor soil, and if the month of May should turn out dry, take a long time to recover. When planting, remember that to make bedding out really effective and a pleasure to look

at, from either a distance or close at hand, the plants must be planted as to cover the earth, and so give an unbroken blaze of colour. The beds in the People's Gardens in Phoenix Park are a first-rate lesson; also any one who has had the opportunity of seeing some of the French parks, and also some of the bedding-out in private places abroad, will know what good bedding-out can be like. It may be due to the weather, but it is also largely due to the fact that those in charge understand and know how to use their plants.

Towards the end of the month Primulas, Polyanthus, Primroses and Auriculas may be divided up. Worthless varieties or poor colours should be burnt, and only the best retained. Any specially good plant might be marked, divided, and in time a stock of one particular colour collected. Unless these plants are divided after flowering, they will be pushed up out of the ground by the old roots, and they will be starved and baked all through the summer months. Young roots will be seen pushing out just below where the leaves start, and unless the plants are lifted, the old root stock removed, and the plants replanted, these young roots will die before they reach the soil. In the case of Auriculas, one often sees old plants with from three to four inches of old root stock above the surface, and a few miserable leaves on the top of these.

Fruit trees on walls where the fruit has set may be syringed when the weather is hot and dry, to keep down fly. Quassia, either made on the premises from chips, or the extract bought in tins and diluted according to directions with water, is a good liquid to use, and renders the leaves bitter and so distasteful to insects.

Where not already done, a layer of clean straw may be put round strawberry plants, on which the flowers can lie, later on it will keep the fruit clean, and off which the rain can easily drain.

GREENHOUSE.—Arum Lilies which have done flowering may be divided and planted out in trenches out of doors. Azaleas, Cytisus and other flowering shrubs from the greenhouse may be removed to a sheltered corner, and stood there in the open. They should, however, not be left standing any length of time on the ground, but on an ash bottom, so that worms will not get up into the roots, and will also keep the pots off the damp ground.

Attend carefully to ventilation. The weather during this and the coming month will be uncertain. If it should turn out hot and dry, damp the floors during the middle of the day with a watering-can to moisten the atmosphere, as too dry and hot an atmosphere is as bad for plant growing as one too moist.



POETAZ NARCISSI.

MANY people who have almost a distaste for the Polyanthus Narcissus, with their heavy scent, will find the Poetaz Narcissi pleasing and attractive. This new race is the result of a cross between the Poet's Narcissus and the Polyanthus Narcissus. From three to six flowers are borne on a stem, and they are beautiful either forced as pot plants or in the garden, while their lasting qualities either as cut flowers or in beds exceed most other kinds.

Elvira and Alsace are two of the best varieties, with white perianths and yellow cups, while Jaune a Merveille and Klondyke are two good yellow forms.

Ourisia.

This genus includes about twenty species, although few are in cultivation, confined to Andine, South America, New Zealand, and Tasmania. Commerson received the first plants from Governor Ouris of the Falkland Islands, so the genus was named after him.

Ourisia coccinea, the only member which has really become popular in gardens, is a native of the Island of Chiloe, situated near the south-west extremity of Chili.

A moist soil, peaty or otherwise, will suit the plant, or near the edge of a bog bed, where larger plants will not obtrude; provided moisture is abundant the sun will not be injurious, but if the site is not well watered partial shade is beneficial. By streams in our Wicklow gardens *Ourisia coccinea* may be seen at its best, making a carpet of deep green, prettily notched leaves, and sending up flower stems a foot high, from June onwards, bearing drooping tubular flowers of a brilliant scarlet.

Altogether different in appearance are the New Zealand *Ourisias* which have been introduced, such as *O. Colensoi*, *Cockayneana*, *caespitosa*, and *macrophylla*; with the exception of the latter they have not been a success in our gardens.

Possibly they are of doubtful hardiness, but given the proper conditions *O. macrophylla* is a plant that can be grown successfully, and is worth taking some trouble to grow. At shows one occasionally sees a drawn and attenuated specimen which gives a poor idea of what it should be. A good judge of hardy plants who recently paid a visit to the Glasnevin Gardens, when he saw the subject of our illustration, remarked: "I had no idea that *Ourisia macrophylla* was such a good plant."

The plant figured has been in its present position on the rockery for three years, being one of a batch raised from New Zealand seeds. Some of the seedlings planted in sunny places promptly died, others in partial shade still linger. This one, planted on a rocky bank facing north, has flourished and has formed a tuft two feet across. The soil in which it grows is half peat and half loam, well drained, but remaining moist through the summer. A large and partly overhanging stone gives some shelter through the winter.

This year the pretty pink buds showed towards the end of March, and the flowers began to open, and continued opening well into April. The flowers are white, with yellow hairy centres, three-quarters of an inch across, borne in whorls on stout hairy stems which continue to lengthen until they reach a foot or more high.

The leaves are evergreen, deeply notched and veined, a pointed oval in shape, about 3 to 4 inches long, produced from creeping stems, and carried on channelled stalks.

Another good point about the plant is its freedom in producing seed, which, if sown in a box as soon as ripe, will germinate as freely as "mustard and cress," and in a cold frame the seedlings soon form good plants.

Cheeseman writes that the plant grows in damp mountainous localities in New Zealand from sea level up to 4,500 feet altitude. This author also states *O. macrocarpa* is the finest species in the genus, resembling *O. macrophylla*, but stouter in habit, and bearing larger flowers on smooth flower-stems.

The Barberries.

THE common barberry, botanically known as *Berberis vulgaris*, has long found a place in our shrubberies and woodlands, and when thickly clothed with its *pendulous* racemes of red fruits in autumn is a very attractive object. Formerly a decoction of the bark was frequently used as a cure for jaundice, and even now requests for a few twigs of barberry are not infrequent, and quite recent cases are known of a cure being effected after a course of treatment under a doctor had failed. The purple-leaved form of the common species has been largely used in ornamental planting, and when carefully placed among other shrubs it is capable of a good effect. Like most other "coloured" leaved shrubs, however, it has been frequently planted to excess, the effect being thereby spoiled. Of recent years there has been some notable additions to the genus, principally from China, and at the present time there is still a number of unidentified kinds in cultivation which promise to be attractive shrubs when fully developed.

Botanists just at present include the well-known evergreen "*Mahonia*" under *Berberis*, but for garden purposes we may consider them apart.

The true Barberries may be divided into two sections—viz., evergreen and deciduous, and differ from "*Mahonia*" in having simple not pinnate leaves.

The value of the more brightly-flowered species for ornamental planting can hardly be over-estimated, while so great is the range in height and habit that there are few positions of any worth that cannot be suitably planted with one species or another.

Although not calling for any elaborately prepared soil, good cultivation will be amply repaid in flowers and foliage.

Nearly all the Barberries are spiny, though some are less conspicuously so than others. Though not in very common use as hedge plants, there are several species which might be used in this way with very good effect. There are a very large number of species and varieties, some of which are not very important outside of large gardens and public collections. In the following enumeration only the more showy and useful kinds are mentioned:—

Berberis buxifolia, a Chilean species, is perhaps best described as sub-evergreen, since it loses a good many leaves in winter, due, no doubt, to its coming from a fairly warm country. When well grown it forms a handsome shrub with its dark green box-like leaves and yellow flowers. The dwarf variety *nana* is more nearly evergreen in the ordinary sense, and makes a useful rockery subject.

B. Darwinii is perhaps the finest April flowering shrub we have, and although, like the last species, hailing from Chili, seems perfectly hardy in all parts of the British Islands. This is a strong-growing species, which will reach a height of 6 to 8 feet, and is a magnificent object when in flower. What may be taken as a typical form has small, rather holly-like leaves and racemes of deep orange flowers, often followed in autumn by a crop of blue berries. Seedlings from these fruits vary a good deal, some having narrower less spiny leaves and yellow, rather than reddish orange flowers. Of this species there is, too, a dwarf form.

B. acuminata, from Yunnan, is a handsome species, with rather long lance-shaped leaves,

which are sharply toothed, and often turn crimson in winter.

B. candidula is now the name by which *B. Wallichiana hypoleuca* is known. It is a rather dwarf, low-growing shrub, with dark glossy green spiny leaves, which are glaucous on the under surface. It makes a useful shrub for rockwork.

B. empetrifolia, a Chilean species, forms a pretty shrub, with slender branches and small Strawberry-like leaves. The small yellow flowers are not striking, but the general aspect of the plant is decidedly attractive. There is a red stemmed variety known as *rubricaulis*, well worth a place in the rock garden.

B. Gagnepainii, a new Chinese species, with fairly long lance-shaped leaves, having spiny margins. The flowers are yellow, borne on reddish stalks. Of erect habit, this looks like making an ornamental shrub, and is said to reach a height of 6 feet.

B. ilicifolia, from Terra del Fuego, is attractive in its glaucous green holly-like leaves. It is evergreen, or nearly so, in sheltered warm places, but in colder localities loses most of its leaves in winter. A rather similar plant which often does duty for the previous species is *B. Neuberti*, which is really a hybrid between the common "*Mahonia*" and the common Barberry.

B. sanguinea is a dwarf-growing Mongolian species, with fairly long, narrow spiny leaves and reddish-yellow flowers. It is a neat plant, and suits the rock garden, where it can be seen to advantage.

B. stenophylla, a hybrid between *B. empetrifolia* and *B. Darwinii*, is perhaps the most beautiful and useful of all the Barberries. It is perfectly hardy, quite evergreen, and flowers profusely with unfailing regularity. At its best it will reach a height of about 5 feet, forming graceful pendulous branches, clothed with small dark-green leaves and bearing in April a mass of orange-yellow flowers. For specimen beds, groups in the shrubberies or for furnishing sunny slopes, this is a magnificent shrub, and should certainly be in every collection. There are several varieties, notably *latifolia*, which has larger leaves than the type, and is stiffer in habit, but makes a good specimen too.

B. stenophylla corallina is a striking variety, the buds being quite scarlet, the flowers opening a deep rich yellow; *gracilis* is a graceful form with small leaves and abundance of flowers; *Irwinii* is a dwarf shrub for the rock garden, of compact growth, and flowering freely; *reflexa* is also comparatively dwarf, and makes a pretty shrub. Other forms are brilliant, *erecta* and *diversifolia*, the latter having both spiny and spineless leaves.

B. subcauliata is a new species, with rather small leaves, glaucous below. The branches are densely spiny, growing about 3 feet high in the specimens at present under observation.

B. verruculosa, from W. China, is a dense low-growing species, with glossy dark-green leaves, having spiny margins. The flowers are golden yellow, followed by blackish fruits.

B. Wilsonae is now an established favourite in all gardens where shrubs are esteemed. Introduced from China some years ago by Messrs. James Veitch, it was named after Mrs. Wilson, wife of the well-known collector. It forms a dwarf diffusely branched shrub, with small leaves and many spines. The flowers are golden yellow, followed in autumn by masses of pinkish, white berries. The leaves turn ruddy red in

autumn, rendering the plants most attractive at that season.

All the above-mentioned are evergreen or sub-evergreen, and the following kinds are deciduous:—

B. brevipaniculata is a new Chinese species, making a strong-growing prickly deciduous shrub, with short racemes of yellow flowers in summer, followed by dense clusters of claret red fruits in autumn.

B. dictyophylla, another new Chinese species, promises to be a very decorative and popular shrub. It varies somewhat from seed, but generally the leaves and stems are glaucous, the latter being very attractive in winter. The flowers are pale yellow. This species has been known for some years, but has only recently become plentiful.

B. lucida, a Spanish species with spatulate finely-toothed leaves, is a neat and pretty species of value for the shrubbery. The flowers, which are yellow and freely produced, are not conspicuous, but are rather pretty in April.

B. polyantha, from China, appears likely to be a useful shrub. It grows 4 feet high, bearing clusters of bright green leaves and yellow flowers, followed in autumn by coral berries.

B. Sieboldii is a strong-growing, handsome shrub from China and Japan. It reaches a height of 6 or 7 feet, producing strong spiny branches and clusters of fairly large glaucous leaves. It makes a good single specimen, and is effective in large shrubberies where the glaucous leaves show up to advantage.

B. Thunbergii, a Japanese species, is one of the most effective of autumn shrubs. The leaves are not spiny as in many other species, but before falling in autumn they turn a brilliant orange scarlet, and remain effective for some time. This is a shrub which should be planted in bold groups for the sake of its brilliant autumn colour. There is a dwarf form—minor—well suited for the rockery.

B. umbilicata is practically deciduous, though it may retain a few leaves through winter. The young shoots are striking, being red, ultimately becoming dark green.

B. virescens, a Himalayan species, is a most desirable plant in its best form. The young shoots are bright red, while in autumn the leaves become a beautiful combination of red and orange. This is a good shrub, of medium growth, well worth serious attention from lovers of beautiful plants.

J. W. B.

Violas

By W. A. MAXWELL, Gardener to James Dickson, Esq., J.P., Milltown House, Dungannon.

YEAR by year the cultivation of these plants is being considerably extended. For a great number of years *Violas* were merely treated as border plants, generally to be seen in large clumps, but now as bedding plants they have few equals, especially as a groundwork for taller subjects; in their range of colour may be found the softest lavender to harmonise with other subjects, or brilliant yellows for a contrast.

There are one or two simple ways of cultivating *Violas*, each effectual in its way. Cuttings must always take the leading place for increasing the stock. To take the cuttings, plants which have finished flowering should be cut over with a sharp knife, after which some nice green shoots will burst forth; these are then utilised as cuttings, making each about three inches long, and cut

clean at a joint. These cuttings when made should be dibbled into a prepared frame, the soil to consist of old manure, loam, and a good sprinkling of sand. I find the best time to take cuttings is about the third week in September. The cuttings should be well watered and shaded for some time, then gradually admit air until the plants have become well rooted, when the lights may be removed altogether. Although this is generally the way for taking cuttings, they may be rooted at any season of the year, providing material can be had to furnish cuttings.

Growing *Violas* for exhibition is indeed completely different to growing for bedding or massing, as *Violas* for showing require time and care, whereas bedding plants may be planted out and allowed to grow at will. When planting *Violas* for exhibition the soil should be of a tentative nature, not too easily dried up with the sun; mix with the soil some very rotten manure, such as old mushroom beds and a fair supply of sand. The plants should have at least twelve inches space each way to allow of hoeing and watering; plant firmly, and give a good soaking of water. A great many exhibitors differ on the matter of how many flowers should be allowed on each plant, but the less flowers one has on each plant the better. Nowadays, when competition is so keen, it behoves us to grow for large flowers, aiming, of course, at symmetry and colour of blooms. About four shoots taken on each plant and neatly staked should give more than enough material to work on for exhibiting. Weak solutions of liquid manure given alternately tend to increase size of flower and brightness of colour. Some exhibitors give waterings of sulphate of ammonia, but I find liquid from the cowhouse just as beneficial.

The plants should be allowed to flower once, so as to make sure of the colours, and afterwards pinching them off until at least a fortnight or three weeks before the show. Select colour which will give effect, taking care not to have two of the same hue together, as the one would spoil the effect of the other. Flowers intended for showing should be cut early the morning of the show and immediately placed in water in a dark corner. All blooms should be shown individually on boxes painted green, unless otherwise stated by committee. The boxes should be at least 2 feet by 18 inches, which will show twelve blooms comfortably. Each bloom requires a neat white collar at least a quarter of an inch wider than the flower itself, and should be placed in the lead tube underneath the box with as much stem as will leave the bloom sitting flat on the paper collar. Name each variety neatly, as I have seen some of the blooms cast by the judges at different shows for untidiness which would otherwise have gained prizes, and if defeated take it all as a matter of fact and try again.

Some good varieties for showing, which can be procured from nurserymen who advertise in IRISH GARDENING, are:—*Agnes Kay*, *G. C. Murray*, *James C. Erskine*, *Mary Birnie*, *Lark*, *Mrs. Chichester*, *Moseley Perfection*, *Stirling*, *Wm. Hunter*, *Isolde*, *Edina*, *Virgin White*.

Some good bedding *Violas* are:—*Marchioness*, *Countess of Hopetown* and *Snowflake* for whites; *Ardwell Gem*, a primrose shade; *King Cup*, *Sovereign*, *Klondyke*, yellows; *Kitty Bell* and *Bridal Morn*, lavenders; *Maggie Mott* and *Blue Gown*, blues; *Councillor Waters* and *Archie Grant*, dark blue.

Violas grow more in tufts than *Pansies*, and are much less liable to perish with drought.

The Rose Annual, 1913.

THIS Annual, which has just been issued by the National Rose Society to its members, will be specially welcome, as it contains a full report of the Rose Conference which was held in London in May last, when so many Rose growers from the Continent and from the United States were over for the great International Horticultural Exhibition. The address of the President (the Rev. J. H. Pemberton) on "The Modern Development of the Rose," intensely interesting and exhaustive, tracing the steps in the progression through "Hybrid Perpetual," "Tea," "Hybrid Tea," "Dwarf," "Perpetual Cluster Roses," to the "Pernetiana Section" and "Pillar Roses," was followed by addresses from Mr. E. G. Hill, of the United States, the introducer of the Rose "Richmond"; Heron Peter Lambert, Jonkheer J. L. Mock, Monsieur L. Vilmorin, Monsieur Pernet-Ducher, Monsieur A. Soupert, Dr. A. R. Waddell, Mr. H. R. Darlington, Mr. W. Easlea, Mr. Frank Cant, Mr. G. L. Paul, Mr. Alexander Dickson, &c., names so familiar in the Rose world. All Rose lovers should secure the report of the Conference in this permanent form.

The Annual contains also, amongst other good things, a valuable paper on "The Treatment of Black Spot," by Dr. A. R. Waddell. All Rose growers will rejoice to know that spraying with formaldehyde, diluted to a strength of one tablespoonful to a gallon of water, has been most successful in destroying this pest, and that it is an equally good remedy for mildew and other fungoid diseases. Mr. Darlington writes on "The best Roses for Standards," and describes the treatment for the various varieties. "Growing Roses under Glass" is dealt with by Mr. Easlea; Dr. A. H. Williams treats of "Wichuriana Roses," Mr. E. G. Hill describes the growing of "Roses in the United States," Mr. G. M. Taylor, "Rose growing in Scotland," Mr. Alexander Dickson and Dr. O'Donel Browne, "Rose growing in the North and South of Ireland," respectively. The "New Seedling Roses of 1912" are described by Mr. H. E. Molyneux, the "Pernetiana Roses" by Mrs. Ernest H. Farmer.

The Annual also gives a descriptive list of the more important roses which have been introduced during the last five years. It is beautifully illustrated with coloured plates by the Hentschel-Colourtype process, the most successful of these being, "A Basket of Hugh Dickson (H. T.)," the colouration of which seems perfect: "A Vase of Rayon d'Or," and "A Basket of Irish Elegance."

The National Rose Society is holding four shows this year. The Spring Show, May 1st, London; the Metropolitan Exhibition, July 14th, at the Royal Botanic Gardens, Regent's Park; the Provincial Show, at Gloucester, July 15th, and the Autumn Exhibition, in London, on Sept 11th and 12th. An annual subscription of half-a-guinea entitles one to twenty-five shillings' worth of tickets for these shows. "The Rose Annual," as above described, a revised edition of "The Official Catalogue of Roses," a new edition of "The Enemies of the Rose" with coloured plates of the principal insect pests. New members will receive in addition a handbook on "Pruning Roses" and one on "Planting Roses."

"The Rose Annual" can be obtained by non-members from Mr. E. Mawley, Rosebank, Berkansted, Herts, for 2s. 6d., post free.

R.H.S. of Ireland Spring Show.

THIS Exhibition, held on April 16th and 17th, was a great success: so numerous were the visitors pouring in from the Royal Dublin Society's Spring Cattle Show, that during part of the afternoon it was difficult to see the exhibits with any degree of comfort. Everywhere one heard expressions of praise for the beauty and luxuriance of the floral exhibits.

In the passage Messrs. Alex. Dickson's exhibit of Geraniums, Pelargoniums and other decorative plants caught the eye: then, entering the main hall, Messrs. Young & Co.'s beautiful Carnations appealed to one by colour and by scent. The excellence of the stand of flowers and staging drew many admirers. We always look for good Mignonette at this Show, and were not disappointed. Sir F. Shaw being first with well-grown examples. One end of the hall was filled by the floral group staged by Messrs. Ramsay, a really beautiful work of art, which gained a gold medal.

Near by was another lavish display of flowers, with a central stand of pink Lilies and white Statice, made by Messrs. R. Jameson & Sons. The Carnations were particularly good, and a gold medal was awarded to this group.

The Amaryllis were enormous, with F. V. Westby in the first place and Alderman Bewley second.

Gloxinias and Calceolarias gave a gorgeous flare of colour, with Alderman Bewley first in both classes. The Schizanthuses were quite a feature of the Show, with H. S. Guinness first, the Right Hon. T. W. Russell second, and Sir F. Shaw third.

The exhibits for dinner table decoration were not so numerous as last year; good taste and simplicity won the day, and Miss E. Lanigan-O'Keeffe was awarded first place, Mrs. Best second, and Colonel Claude Cane third.

Including fruit, vegetables and flowers, the number of classes in the schedule totalled 72, an advance of five upon last year.

Daffodil Notes.

THE exhibits of Daffodils made a very fine display, but on close examination many vases were either past their best or showed the effects of the season. The mild February rushed on the growth, and then Jack Frost and high winds played havoc with all precocious plants, and the gale a week before the show accounted for many of the "also ran." Those who read Mr. L. J. Studholme's article in last issue, and followed his advice, cut and developed their blooms under cover, and so obtained clean flowers.

Mr. L. J. Studholme's stand, which won the cup for a collection of 50 varieties, was really very fine indeed. The blooms had size, shape and colour, and showed careful cultivation: they stood well above all the other exhibits. The good blooms were Bernardino; Heroine was a glorious flower, with its red edge cup like a giant Albatross; Red Admiral had a large cup, edged with brick red, which caught the eye at once; Golden Rose is a very much improved Golden Phoenix; Weardale Perfection was of huge size, as was also Glory of Noordwijk; Semiramis, a good Poeticus like Barrii, with overlapping segments, and a nice frilled crown with orange edge. I also noticed on this stand some Leedsii seedlings staged.

The second place was awarded to Mr. C. Parr, for a splendidly staged lot of nice clear blooms of good colour, but lacking in size. A promising Leedsii seedling was put up here.

C. M. Doyne, Wells, Gorey, was awarded the 3rd prize.

The other classes were very fair, but I saw nothing outstanding. I was rather surprised, however, to find Albatross staged in the Parvi class, and also a prize card on the exhibit.

Narcissus, six pots, in six distinct varieties (Polyanthus and Poetaz varieties excluded), pots not exceeding 7 inches—1st prize, Alderman Bewley.

Narcissus, Polyanthus, six pots, not less than three varieties, pots not exceeding 7 inches—1st prize, Alderman Bewley; 2nd, R. T. Harris, Saintbury, Killiney.

Narcissus, twelve distinct varieties of true Trumpet (Magni-Coronati): to be shown in vases; five blooms of each variety—1st prize, Mrs. MacVeagh, Drewstown, Kells; 2nd, Mrs. Hely-Hutchinson, Donabate.

Narcissus, twelve distinct varieties of Medio-Coronati; to be shown in vases; five blooms of each variety—1st prize, Mrs. Hely-Hutchinson, Donabate; 2nd, Mrs. MacVeagh, Drewstown, Kells.

Narcissus, Trumpet (Magni-Coronati): six vases, distinct; five blooms in each vase.—1st prize, Major S. C. Hickman, Newmarket-on-Fergus; 2nd, T. P. Brophy, Herbertstown, Athgarvan; 3rd, Mrs. Butler, Priestown; reserved, Viscount de Vesci, Abbeyleix.

Narcissus, Parvi-Coronati; six vases, distinct; five blooms in each vase.—1st prize, T. L. Richardson, Prospect House, Waterford; 2nd, L. T. Studholme, Ballyeighan, Birr; 3rd, C. W. Parr, Parkstown, Ballivor; reserved and highly commended, Major Hickman, Newmarket-on-Fergus.

Narcissus, Cup and Saucer (Medio-Coronati); twelve vases, not less than six varieties; five blooms of each—1st prize, Major S. C. Hickman, Newmarket-on-Fergus; 2nd, R. T. Harris, Saintbury, Killiney.

Narcissus, single; twelve vases of five blooms each; at least six varieties—1st prize, Major S. C. Hickman, Newmarket-on-Fergus; 2nd, Mrs. Butler, Priestown; 3rd, Mrs. MacVeagh, Drewstown, Kells; reserved and commended, Sir F. Shaw, Bushy Park, Terenure.

The Trade staged a large number of seedlings, and Lissadell secured a well deserved Gold Medal, the only one awarded, for one of the finest displays I ever saw set up in Dublin. It contained more than 50 per cent of home-grown seedlings, many of which are real "Home Rulers." It was a pity the seedlings are as yet only under numbers—

95/B.—A magnificent trumpet of Weardale type.
1000/B.—A large cream trumpet, with a nice expanding mouth.

510/A.—A very striking blood-edged Parvii.

456/A.—A very good Medio, with red edge cup, with a very substantial overlapping perianth.

533/B.—Was a giant King Alfred, but larger.

560/B.—An enormous Medio, but not coarse.

Incognita was very good; Queen Maeve, a good poeticus; Rajah, a good deep yellow trumpet just beyond the border line as a medio. A lot of seedlings of Triandrus blood were very pretty.

Messrs. Hogg & Robertson staged a very fine group of Daffodils and Anemones, for which

they received a Silver Medal; there were about forty Daffodil seedlings in single blooms also under numbers—

One bloom was a magnified King Alfred, about one-third as large again.

159/207 was a giant White Queen.

170/144 had a very good perianth, with a nice large cup.

176/159 should make a good garden medio, if its habit of growth is satisfactory.

Messrs. Hartland & Son had also a nice lot of seedlings, but the most of the blooms suffered much from the late storm or travelled badly, or, as the Cork climate is so much earlier than our midland, the Show is too late for Ard Cairn. However, Czarina, a very giantess Leedsii, was grand, as also Bernardino. On the lower row were some lovely blooms of Triandrus blood.

Some amateurs—namely, Mr. Beamish and Major Hickman—staged seedlings, not for competition, of the De Graaff blood, nice pendant blooms, but on the small side. These may, however, improve later on. At present, to be up to date, we must get size, but it is to be hoped coarseness will not come at the same time.

The staging of seedlings by amateurs this year shows that we have a number of hybridists now in Ireland, and I would suggest to the Schedule Committee of the R. H. Society to provide a class for seedlings at their next Spring Show, and if they do so, it is to be hoped it will be well patronised.

C. DOUGLAS.

Hardy Plants.

THE number of exhibitors in the two Alpine classes is still very small, although the number of devotees to the cult of Alpines grows yearly; the prizes are very generous, yet they do not attract competition.

The table of Alpines limits to a certain extent the exhibitors to the neighbourhood of Dublin by reason of the carriage of materials, time and expense in staging; people do not like to despoil their gardens of good plants for the sake of the honour of winning a prize.

Naturally, every true Alpine lover likes to see his plants growing on the rock garden in preference to pans, but in many gardens there is a spare frame, or even a plunge bed, where Alpines are propagated, and a certain number of plants are grown in small pots until strong enough to be planted out or given away. A suggestion was put forward by a reader in IRISH GARDENING last May, that there should be a class for these spare plants—say "a dozen choice Alpines in 3-inch pots"—this would enable any one, even from a distance or only possessing a small garden, to compete with a fair prospect of success.

It appears likely that the Tully Cup for the table of Alpine plants will soon be won outright, and we suggest that a class on the lines proposed above should be instituted, then probably we will see more choice plants exhibited and greater interest taken in the competitive classes for these beautiful little mountain plants.

Mrs. Mitchell, Ardlui, Blackrock, was again awarded the Tully Challenge Cup for the table of Alpine plants, with conditions as follows:—"To be shown as far as possible representing natural conditions, small Coniferae not exceeding 18 inches high, Alpine flowering shrubs, and foliage plants, all with roots being allowed, and no cut stuff to be arranged in the groups. Tables

12 ft. x 4 ft. provided." Mrs. Mitchell's exhibit was prettily arranged, a green sward leading up to a Swiss chalet with flowering Alpines around, but although the virgin cork which was used is lighter than stone it is not so effective as the natural rock for an Alpine table.

Alpine plants in flower, twelve pans, pans not to exceed 12 inches or to be under 8 inches diameter (inside measurement), each pan to contain a different species or only one variety of a species.

Mrs. G. Greer, Curragh Grange, won the first prize with good pans of the following:—*Viola gracilis*, *Saxifraga Camposii* and *S. bathoniensis*, *Androsace Chumbyi*, *Campanula muralis*, *Morisia hypogaea*—a particularly good pan—*Iberis Little Gem*, *Arabis aubretioides*, *Primula rosea*, *P. frondosa*, *Aubrietia deltoidea cilicica*, and *A. deltoidea argentea*.

Mrs. G. Mitchell was a close second, having very nice pans of *Ramondia pyrenaica*, *Viola gracilis*, *Phlox subulata*, &c.

Some choice subjects for this class might be proposed for future exhibitors, such as *Primula* Mrs. J. H. Wilson, *P. ciliata purpurea*, *Helichrysum bellidioides*, *Dianthus microlepis*, *D. Freyni*, or *cal-alpinus*, *Phlox Nelsoni*, *Saxifraga Boydii*, and *S. Borisi*, and *Draba imbricata*.

Hardy cut flowers collection of 24 bloomed in the open air to be shown in vases comprising not less than 12 distinct varieties, not more than three of one genus, shrubs not excluded, out of season flowers considered a demerit.

Captain L. Riall was placed first in this class, some of the flowering shrubs, such as *Olearia stellulata*, *Erica arborea*, *Cytisus praecox*, *Berberis Darwinii* being very fine, while *Calta polypetala*, and *Dendromecon rigidum* were very bright.

Mrs. A. Jameson was a good second, while C. M. Doyle, Esq., came third.

Ceanothus rigidus and *Eochorda Alberti macrantha* should be two useful shrubs for this class.

In the collection of 12 vases of hardy cut flowers bloomed in the open air, not less than six varieties, the Hon. Judge Bird was placed first, with the exception of a weak vase of *Crown Imperial*, the others, as *Ceanothus Veitchii*, *Erica arborea*, *Tulips*, *Hycinthus*, *Narcissus* *Mad. de Graaff* were of exceptional merit, but suffered somewhat by a crowded arrangement. Mrs. G. Mitchell was second, while Viscountess de Vesci gained the third prize.

In the passage leading to the Central Hall were some very good exhibits from nurserymen.

Messrs. Piper & Sons (London) received a gold medal for a well staged exhibit of Alpines and shrubs. *Aquilegia glandulosa*, with a quantity of its beautiful blue and white flowers, attracted much attention. *Ranunculus amplexicaulis*, a lovely white Buttercup, was also particularly good. Among other good plants staged were *Sarracenia purpurea*, *Saxifraga Boydii*, *Houstonia cœrulea*, *Cypripedium macranthum*, *Gentiana verna*, *Primulas*—such as *Veitchii*, *Beesiana*, *Munroi*, and *helvetica alba*.

For their stand of Alpine plants Messrs. Watson received a silver medal, although not so large a group as the last stand, yet so many good things were massed together that the exhibit was just a mass of colour. The prettiest of all the Forget-me-Nots for rock work, called *Myosotis Ruth Fischer*, was in very good form, also some

of the rock *Primulas*, as *Aretotis viscosa*, *helvetica alba*. *Romanzoffia sitchensis* is an uncommon and pretty plant. Other plants shown were *Aubrietias*, *Androsaces*, *Viola gracilis*, *Morisia hypogaea*, *Hutchinsia alpina* and *Rehmannia Henryi*, the latter is not hardy.

Messrs. Baker, of Wolverhampton, had a very representative set of Alpines, for which they received a bronze medal. This firm introduced many of the good red and white mossy *Saxifrages*, which are now grown largely. In Messrs. Baker's stand a well-flowered batch of *Incarvillea grandiflora* showed up boldly; other good plants were *Dianthus caesus* (Baker's variety), *Phlox Violet Queen*, *Ranunculus amplexicaulis*, *Houstonia cœrulea*, *Violas* and *Aubrietias*.

Messrs. Pennick & Co. received a silver medal for a group of shrubs and Alpines. Both groups were showy and attractive, on the Alpine table. *Helichrysum bellidioides* was very noticeable with its little everlasting flowers. *Cytisus Ardoini*, *Draba imbricata*, *Iberis gibraltaria*, *Phlox Nelsoni*, and other plants made a pleasing display of colour.

Besides bringing *Narcissi*, which gained a bronze medal, Messrs. Hartland, of Cork, staged a table of Orchids and Alpines, which received much attention and gained a silver medal. *Myosotidium nobile*, the large New Zealand Forget-me-Not, was represented by a strong flower spike. The rare *Deinanthus cœrulea* was just coming into flower, while *Viburnum Carlesii*, beautiful and sweet scented, was already open. Other plants shown were *Sax. oppositifolia*, *W. A. Clarke*, *Silene Hookeri*, *Viola Mrs. Bowles*, and the rare double *Primrose Pompadour*.

Auriculas have never been a strong point at the Dublin Show, so it was a surprise to many people to see the fine strain exhibited by Mr. S. A. Jones, of Gowran. So much interest was centred around this exhibit, also the Alpine tables, that it was difficult to see the plants properly. The yellow *Auriculas* included good named sorts, such as *Alexandra*, *Dusty Miller*, *Mrs. Robinson* and *Golden Queen*, but it was the seedlings in endless colour variation which evoked the greatest admiration, for they are real garden *Auriculas*, and do not require to be grown in pots under glass.

In most parts of Ireland *Veronica Hulseana* may be considered a hardy shrub. Among a beautiful display of greenhouse flowering plants exhibited by Messrs. Alex. Dickson & Sons, of Blackrock, this lovely *Veronica* was to be seen showing its value as a *decorative* pot plant.

In the large and beautiful floral exhibit of Messrs. C. Ramsay & Son, Dalpine *Cœcorum* in a bold group was exceptionally good; the large trusses of sweetly-scented pink flowers and deep green foliage gave evidence of the health of the shrubs.

R. H. Beamish, Esq., of Cork, sent up some seedling Daffodils and new hardy plants which were awarded the certificate of merit for novelties. *Viburnum Davidii* is a new Chinese shrub, small of growth, with flowers of no merit, but said to bear ornamental fruit. *Primula Juliae* is a new and distinct *Primrose* from the Caucasus, but *Primula Mrs. Hall Walker* seems to be identical with *P. marginata* Linda Pope.

Mrs. Greer, of Curragh Grange, was also awarded a certificate of merit for a new hybrid *Viola* with deep velvety flowers: it is said to be a hybrid of *gracilis* and *Bowles Black*.

The Month's Work.

The Flower Garden.

By J. H. CUMMING, Royal Dublin Society,
Ballsbridge.

GENERAL REMARKS.—By the middle of the month plant out East Lothian Stocks, Early Flowering Chrysanthemums, Antirrhinums, Larkspurs, Scabious, Dianthus, and such things, reserving for a fortnight later tender things, such as Begonias, which suffer easily by cold winds. See that all plants are hardened off sufficiently before placing them in summer quarters and do not stint them with water at the roots, so as to lift with good balls.

ANNUALS.—Many beautiful hardy Annuals are sown where they are to flower, but how many neglect the thinning out process! Few have the courage to thin out the plants to, say, three inches apart, and yet by so doing they would reap a better reward by seeing stronger and more free-flowering plants. Of late years I have sown in cold frames Godetias, Eschscholtzias, Clarkias, Larkspurs, &c., and when large enough pricked them off singly, and finally planted out in beds at the end of May. By so doing one gets strong, healthy plants which bloom till the very end of the season. Where large beds are to be filled with Annuals, try a ground work of one colour and some tall growing subject as dot plants placed five or six feet apart and that rise to a similar height. There is scope in this for original ideas, and we want to get off the beaten track. If the groundwork is dark, make the dot plants to appear bright and gay. Let me here put in a word too for single Asters, a mass of them in colours is really a fine sight.

SWEET PEAS are everybody's favourites, and some think they cannot be grown except in something like celery trenches. Yes they can. Quite respectable vases can be picked from plants in butter tubs. Paint them green and bore a few large holes in the bottom. Cover the holes with pot shreds, and over the bottom of each tub place some old manure and soil. A handful of bonemeal mixed with the rest of the soil will be so much the better. Three plants are sufficient in each tub, and these, supported with stakes, will furnish a surprising number of blooms.

WALLFLOWERS are just at their best, and one is loth to pull them out till the end of May, when they must give place to other things. About the 20th I like to sow seed for next year's display. They are often sown too late, and one frequently hears people saying they are not worth growing. Sow half an inch deep in the open. When ready to handle set the seedlings six inches apart. In this way a dense mass of roots is formed, and the plants are so strong and sturdy that they suffer little check when set out in the beds, borders, or window boxes in the autumn.

HERBACEOUS BORDERS will now require looking over. Where the Phloxes, Michaelmas Daisies, Heleniums, Chrysanthemums, and similar plants in the borders are making quite a thicket of growths, do not hesitate to pull out all but six or eight. One can personally experience an object lesson in this by leaving one clump alone and thinning out the rest. Use the Dutch hoe whenever the weather permits. After the spade and the plough, there is surely no tool half so valuable in all the realm of husbandry. Time spent with the hoe in May will save much laborious work in the later months of the year.

ROCK GARDENING.—The recent Spring Flower Show at Ballsbridge revealed the growing fascination this style of gardening has for the people. Where collections of Alpines were staged crowds were eager spectators. The present is a fine time for furnishing a rock garden. Planting may now be carried out with safety. Watering must be attended to, and with this slugs may also make their appearance, and must be guarded against. Where it is desirable to increase the stock a frame placed in a shady corner can be used for cuttings of Saxifragas, Alpine, Phloxes, Aubrietia, and Veronicas of sorts.

CHRYSANTHEMUMS.—Growers for big blooms are not so numerous as formerly. The early flowering or outdoor kinds root freely at this time of year, and good cuttings taken now will make nice plants by the end of May. A little light, sandy soil in a cool frame, and the cuttings shaded from the sun, is all that is needed to work up a stock of young plants. In view of the Royal Horticultural Society of Ireland Exhibition next October, growers are yet in time to prepare for the handsome prizes offered. For competition, outdoor Japanese varieties only are worth growing, the other sections of Anemone and Quille, though very beautiful, being too small.

VIOLETS.—To have these good next winter preparations must begin now. A border running east and west is a good position, as in hot, dry situations the plants are liable to attacks of red spider. Violets like a rich heavy soil. Plenty of well made cow dung dug into the soil will ensure this. One method of propagation is to divide the old plants and reset the best crowns. Cuttings previously put into a close frame and struck are undoubtedly the best. Plant firmly and attend to watering for a few weeks till well established. A dusting of soot occasionally will act as a stimulant, and also help to keep the plants free from their chief enemy—red spider.

The Fruit Garden.

By D. McINTOSH, Gardener to Alderman Bewley,
Danum, Rathgar.

EARLY VINES.—In houses where the grapes are ripe fire heat must be discontinued, and the ventilators kept wide open until nearly sunset, when the top ones must be sufficiently reduced to prevent rain beating in during the night. If there are no rats or mice about the immediate outside surroundings, the front ventilators also should be left open. The side laterals on the vines should be allowed to make several leaves when their points should be taken out. This extra growth prevents the back buds from breaking.

MID-SEASON VINES.—Thinning of the bunches should be attended to as soon as they become fit for the operation. First cut out with the scissors all small and deformed berries, and secondly, with discretion, all other berries that will not be required, so that when the bunch is completed every berry will have sufficient space to develop without being squeezed tightly together against its neighbours. At this stage the borders need careful attention as to watering and feeding. Give enough at one application to thoroughly saturate the roots. On warm days frequently damp down the borders and paths, and especially those spaces which are quickest to become dry. If this be done, it will have the effect of keeping down red spider as well as being beneficial to the Vines. Maintain a night and day temperature of 65° and 75° respectively, rising to 90° by sun heat.

THE ORCHARD HOUSE.—Many of the young shoots on trees will be noticed in advance of others. These shoots, when they have grown six inches, should have their points taken out. As the shoots start again after the operation, when they have grown another six inches they should be pinched again, and so on as often as necessary. Sometimes the mistake is made of allowing the shoots to reach the length of nearly a foot and then cutting them back six inches. If possible, this should always be avoided, as it will only excite the buds into growth, and fill the tree with laterals. Watering of the trees should be well attended to, for, at this season of the year, it will be quite safe to give a liberal supply when required. Should the soil be parting from the pots, fill up the empty spaces with fine rich soil. This will prevent the water from finding a quick outlet. Watering and syringing should be done in the morning, and a slight sprinkle be given the borders and paths when closing in the evening. Look over the trees again as to a further thinning of the fruit, but do not thin too severely. The final thinning should not take place until after the stoning.

FIGS.—Whether in pots or planted out, the fig is one of the best of fruit trees. The trees grow freely and give abundant crops of fruit, especially where artificial heat is used. They require copious supplies of moisture at the roots throughout their period of growth. Pinch the young growths when they have reached the length of six inches. Pinching tends to harden the wood and induces the shoots to produce an abundance of fruits.

PLUMS AND GAGES.—If due attention was given the trees when in flower, there will now be a good set. A sharp look out must be kept in case of an appearance of green fly. This pest, if not checked in time, almost ruins the young shoots, and the crop is lost for the season, therefore, as soon as the fruits are set, it is well to thoroughly spray the trees with an insecticide. Quassia Extract is a good remedy, if applied to the trees in the late afternoon or evening. Should a spell of dry weather set in, give the borders a soaking of clear water, and afterwards mulch with three inches of half-rotten farmyard manure.

CORDON PEARS.—These trees have shown a fine display of blossom this year. We have had a fair amount of sunshine, and if the pollination of the flowers was seen to on dull days a good set must have been secured. The cultivator must now be on the watch for the pear grub, which is generally found between two leaves or in the eye of the fruits. These grubs cause no end of damage, and if not dealt with in time would soon ruin the crop. An early start should be made to thin the fruits at intervals of a few days until one fruit only remains on each spur. Pinch the young shoots when they have made six or eight leaves. Prick over the surface soil, and if the borders are dry give a soaking of water.

The Vegetable Garden.

By J. G. TONER, County Instructor in Horticulture, Co. Monaghan.

PARSLEY.—At all seasons there is a constant demand for parsley. In late districts the end of this month is an excellent time to make a sowing, and in June for the more favoured portions. Plants raised early in the year are almost certain to push up flower stems just at the time when plenty of leaves are required. It is not so, however, with those grown from a mid-year sowing.

PEAS.—Being such a favourite vegetable these are rarely over done. The Gladstone is one of the very finest kinds to sow this month. It does not grow quite so tall as the giant mentioned in the last notes, but is exceedingly robust. The difficulty in small gardens is to find room for the successional rows. As far as possible they must be kept well apart, divided well over the garden space, with dwarf crops cultivated between. A trench nine inches wide and about two and a half inches deep should be opened for these, and where room is scarce only two lines of seeds sown, these to be six inches apart and the seeds three inches from each other. How many readers will be courageous enough to sow so thinly? No allowance has been made here for the depredations of slugs.

PARSNIPS.—Early thinning is a matter of the first importance with this crop. When the plants are a couple of inches high only one should be left at each station, if they were sown in clumps, as they ought to have been. A pinch of nitrate of soda shaken on the surface soil afterwards will help them along.

CLIMBING KIDNEY BEANS.—Late in the month a single row of these may be sown. This variety is a cross between the scarlet runner and the dwarf French bean. A long succession of pods will be given. Rich ground is, of course, demanded, and supports five or six feet in height. The seeds may be sown about two and a half inches deep and three or four inches apart.

TOMATOES.—Small greenhouses and frames can be utilised for the culture of this popular crop, even though a variety of other plants be, for a large portion of the time, grown therein. Pots of ten or twelve inches in diameter, or handy boxes such as butter firkins, will suit admirably. They should only be half filled with soil at first, and this made very firm after planting. If they are kept near the glass and plenty of air given, little difficulty will be experienced in getting a good return. At all times the side growths are pinched out and the plants kept to a single stem. There is quite a host of varieties, two of the best red ones for amateurs being Sunrise and Supreme.

SPINACH BEET.—Unlike the ordinary spinach, this variety lasts for quite a year if the seeds are sown presently. They are large, and are put in an inch deep in threes or fours at intervals of one foot apart on a well-manured drill. Later the plants are reduced to one at each space. Thereafter all that is necessary is to keep weeds down and pull the leaves constantly. A fine vegetable indeed for winter and spring. It will be ready for use a couple of months or so after sowing.

CABBAGES.—A little seed might be sown now. Any of the dwarf kinds would suit. Most people do not get the final planting done at the right time. When plants are left in the seed-bed until they are starved and leggy they take quite a long time to recover when removed, and so much growing time is lost. When they have reached a height of four or five inches they should be placed in their final positions.

VEGETABLE MARROWS.—Where these are favoured, the ground intended for them may have a dressing of manure and be thoroughly dug. It is by no means necessary to build up a mound for them, nor indeed is it quite desirable to do so. The supply of moisture is one of their most important requirements. At the same time they are often utilised to cover a heap of decaying rubbish, in such a case there can be no objection to their elevation.

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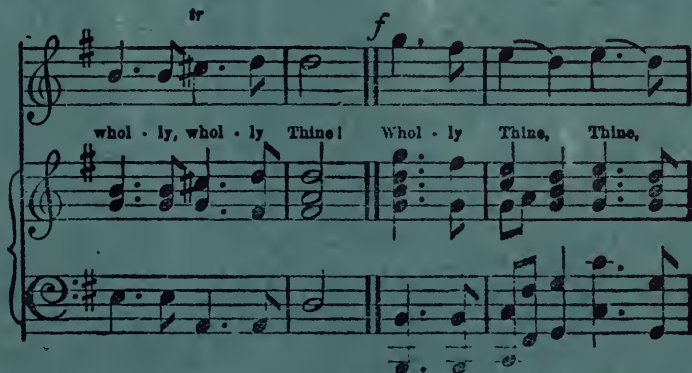
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JUNE
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EDITED BY C. F. BALL.

Hints on Rose Exhibiting.

By REV. J. H. PEMBERTON.

EXHIBITING Roses is a delightful and fascinating pursuit. Delightful by reason of the exceeding beauty of the flower, and fascinating because it is the most difficult of all flowers to exhibit in perfection. A Rose bloom is never stationary ; it is either coming on or going off, and it taxes the skill of the exhibitor to place it before the judges at the exact moment when it is at its best, when it is a "good Rose." The definition of a good Rose, as laid down by the National Rose Society, runs thus :—"The highest type of bloom is one which has form, size, brightness, substance, and good foliage, and which is, at the time of judging, in the most perfect phase of its possible beauty." The aim of the exhibitor therefore is to set his Roses before the judges "in the most perfect phase of their possible beauty," and to assist him in so doing it is hoped the following hints may prove useful. For the present we must confine our remarks to "exhibition" Roses ; specimen blooms usually staged in boxes. Exhibiting "decorative" Roses is another subject which we may possibly deal with later.

I. SOME OF THE BEST ROSES FOR EXHIBITION.

Take care to grow the best sorts ; not too many varieties at first, but just those that are the most reliable. As a foundation the following we have found indispensable :—Bessie Brown, Earl of Warwick, Frau Karl Druschki, Mrs. John Laing, Mrs. T. Roosevelt, Ulrich Brunner, Caroline Testout, Florence Pemberton, Mildred Grant, and William Shean. To these may be

added :—Charles Lefévre, Dean Hole, Hugh Dickson, Lyon-Rose, Dr. O'Donel Browne, Mrs. A. Coxhead, Claudius, Lohengrin, Leslie Holland, and Mme. Melanie Soupert.

II. EXHIBITION BOXES, TUBES AND SUPPORTS.

At all exhibitions of the National Rose Society and the affiliated societies Rose boxes are to be of a regulation size. These dimensions are given in all exhibition schedules. Consult a professional Rose-grower as to the style of box, tubes and wire supports. Note the boxes at the show and examine how the Roses are staged.

III. PREPARING FOR THE EXHIBITION.

At least two days before the day of the show we must begin to select and prepare the Roses we propose to exhibit. In cool weather four days before will not be too long, as the blooms in cool weather take longer to develop. Roses develop more quickly at certain hours of the day than at others. Speaking generally, the growing-period is from 7 to 9 a.m. The object of selecting blooms two days before the show is to keep them from coming on too fast. Quick development is made at the sacrifice of substance. We therefore endeavour to plump up the flowers by keeping them from opening. This we do in three ways :—

(1) *Tying up the Petals.*—To tie a Rose bloom, take a piece of Berlin wool (some growers use raffia), pass it round the middle of the bud inside the last row of petals, and tie it. Some varieties are improved by the tie : it plumps them up and

lengthens the inner petals. Others resent it ; some burst out all the quicker when the tie is removed, some lose their colour. Experience will prove which should be tied and which not.

(2) *Bending down the Shoot*.—This is done to check the flow of sap up the stem, thus retarding development. All varieties of exhibition Roses benefit by bending down, but with some of the short upright kinds it cannot well be done. We take the shoot and bend it down so as to bring the flower into a horizontal position, in the opposite direction to the wind if possible. Tie the shoot below the footstalk of the flower to a stake, leaving the bloom projecting far enough beyond the stake to admit of its being shaded.

(3) *Shading the Blooms*.—Every selected Rose should be shaded by a Rose protector ; there are several kinds in use. In the case of varieties that are impatient of wet it is absolutely necessary that they should be covered a week, or even a fortnight, before the show.

Suppose the show is on Saturday, then early on Thursday morning, as soon as the dew is off, go round the Roses and tie, bend down and shade those you select ; go over them again on Thursday afternoon about five o'clock, repeating the process again on Friday morning. Our object is to select the flowers before the time of the morning development sets in, and in the afternoon just before the dew rises. A Rose tied when wet will lose its colour.

IV. CUTTING AND STAGING FOR EXHIBITION.

(1) *Cutting*.—Always cut the Roses the evening before the show, no matter how near at hand the place of exhibition may be. Roses cut on the morning of the show may possibly be brighter in colour, but they will never last, especially in a hot tent, like those cut overnight. Get your boxes ready with tubes and moss, and with the wire supports laid out before you begin to cut. Commence cutting about 5 p.m., or before the dew rises. Never carry cut Roses about in a basket, especially if the atmosphere is dry, but take a spare cutting box with tubes filled with water to the Rose garden. Put the blooms in the tubes the moment they are cut. A stem exposed to the air, if only for a minute, will harden at the cut and check the flow of water up the stem. One reason why some flowers wither more quickly than others is because the stems have been left too long out of water.

(2) *Water*.—Roses do not like extra cold water ; it gives them a shock. Put a dark red Rose in cold water at the end of a hot dry day, and in a few minutes the petals will curl and then the colour will fly. Do not fill the tubes with water direct from the pump, but let the water stand

in a pail for an hour or so before using it, just to mellow.

(3) *Staging*.—This should be done in a cool shed or stable well ventilated but not draughty. Avoid a stuffy atmosphere, avoid wind ; even the slightest flutter of the petals is detrimental.

In arranging the Roses in the box put the largest flowers in the back row, the brightest and most finished blooms in the middle row, the smallest in the front row. As regards colour, Beginning with the back row, put a light and dark Rose alternately, the middle row having a dark under the light one above, and so on throughout the box. Endeavour to introduce at least one Rose with a decided yellow shade in every twelve that is staged. A good yellow, even if small in comparison, will add brilliancy to the box. Place it in the middle row surrounded on all sides with the darkest reds : if in itself of not much value, it will add points to the reds.

In setting up the blooms remove all leaves except one, for foliage assists evaporation and development. Wire up each Rose with a wire support ; cut a short piece off the stem to insure the rise of water up it, and fix it in the tube so that the Rose when staged will stand four or five inches above the moss. Attach the name card to the wire-holder on the tube. Fix the tube firmly in the box, and, when the staging is completed, slightly jar the box to see that all the blooms are quite steady. Close the lid all but the space of an inch, and the box is now ready for the next day's show.

A box containing spare blooms should be staged and labelled in the same way : duplicates at one end, extra varieties at the other. If possible the exhibitor should take to the show an additional Rose for every one he intends to exhibit.

V. THE DAY OF EXHIBITION.

(1) *Arrival at the Show*.—Endeavour to get to the show early ; by seven in the morning if possible, so that the Roses may be kept quiet between 7 and 9 a.m., the growing period. To carry Rose boxes about in the hot sun is not good for the flowers. Do not get your Roses ready outside the tent, there is sure to be a draught. Entering the tent early gives the exhibitor a choice of position. Light plays a more important part in winning a prize than some people imagine. A mellow light intensifies the colour of the blooms, but clear daylight is harsh and destroys the colour. Therefore avoid a position near the entrance of the tent, and if there should happen to be a choice of canvas, put your box under a strip more yellow than the rest.

Having placed your box on the stage, open the lid slightly, just enough to admit a little air, and then leave it alone. Keep your hands off the Roses as long as ever you can. Many first-rate blooms are past their best at the time of judging because an impatient exhibitor

Society gives the following caution :—" A bloom dressed so as to alter its character shall count as a bad bloom." If we bend back the outer petals away from the others and make the flower something like a Water Lily, its character is altered : it is a bad bloom.



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BRITISH QUEEN.

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has worried them and got them ready too soon.

(2) *Dressing the Blooms.*—Before the judging all ties must be removed and the flowers opened out. Dressing is an art ; it requires an artist's eye ; it is successful only when it presents each variety in its true form. The object of dressing is not to make the flowers appear large, but beautiful. On this subject the National Rose

See that there are no duplicates in the box and that all are correctly named. Partially close the lid and await the warning bell. Then remove the ties that remain on and leave the tent. Go right away while the judges are at work. When the judging is over take down the names of the Roses you have staged. A list of Roses exhibited will show at the end of the season which varieties have proved most useful.

Growing Alpines in Pans for Exhibition.

By W. D. BESANT, Curragh Grange Gardens,
Co. Kildare.

ALPINE gardening in all its phases has of late years sprung more and more into prominence, until at the present time Alpine is almost a household word.

Growing Alpines in pans for exhibition is a comparatively new form of the art, and one which is deserving of more encouragement from horticultural societies. This style of showing Alpines has much to commend it, as one can take their plants to the show and bring them back little or none the worse for their outing, whereas in the older style of exhibiting—i.e., the table of Alpines arranged in the form of a miniature rockery, plants are simply ruined—it is nothing but plant murder; besides, the exhibits when arranged in many cases look ridiculous, the plants being often out of all proportion to the size of the whole.

The Royal Horticultural Society of Ireland has awakened to these facts and introduced at their spring show a class for twelve pans of Alpines. Some of the restrictions in this competition bear criticism. Nevertheless, the movement as a whole is sound.

The choice of subjects suitable for pan cultivation and exhibition is wide and varied, providing there are no restrictions in the competition as to height, &c.; but even if confined to dwarf plants there are still many beauties, such as *Violas*, *Campanulas*, *Primulas*, *Myosotis*, *Morisia*, &c.

Young plants are in the majority of cases preferable to old clumps. By young plants I mean one year olds. Of course there are exceptions, but on the whole young plants, and plenty of them, give a better return in a pan than two or three old clumps.

In most places it is impossible to grow an unlimited number of pans, so that a selection of subjects for the particular season they are required should be made during the summer, so that when the time arrives for panning up one knows just how many pans are required; a few extra to fall back on, of course, should always be made up.

October is about the best time to place the plants in the pans, treating each species separately, and using the utmost care in providing drainage and just the proper soil each individual requires. A frame ought to be prepared in a light airy position, deep enough to admit of a layer of sand in the bottom in which to plunge the pans. When all the pans

have been made up the work of plunging should be carried out, sinking the pans to the rim, except in a few cases where the pans are better tilted at an angle, as for instance in the case of *Androsace*s. Watering will have to be carefully done now; in fact if the plants are well soaked when panned up very little more will be required for a considerable time, and as the days in November and December get duller and darker, too much damp must be carefully guarded against; the lights must be placed on the frame on wet days or frosty nights.

Framing is an advantage, but not an absolute necessity. The pans may be plunged in some sheltered place out of doors, provided some protection is given to the damp-haters, such as fixing a sheet of glass over them.

Once safely through the winter and into the brighter days of early spring many of the plants will show signs of growth. When once the plants are growing freely, a little mild feeding is beneficial, especially to *Saxifrages*, *Violas*, *Campanulas*, and several others. Feeding of Alpines is a much-debated point, but it certainly pays in pans, for if fed lightly with some approved fertiliser Alpines will grow more vigorously, throw more flower, and larger, while in some cases the colour is somewhat intensified.

A few plants with hints how to treat them may be useful to readers.

Viola gracilis makes a splendid specimen pan. Cuttings should be rooted during the summer in good sharp soil. Make up the exhibition pan in early autumn, placing the plants almost as close as they will go; by this method one gets a much evenner and better pan than by using two or three old clumps, which as a rule are inclined to be straggling. Other *Violas* which can be treated in a similar manner are *V. bosniaca*, *cornuta papilio*, *Floraiensis*, &c.

Morisia hypogaea is another gem for spring work. Insert root cuttings in May in sand, they will soon form a crown and start to grow, when they should be potted singly into thumb pots in a sandy compost with a little peat added; by the autumn they will have made good plants, and should be panned up in a compost similar to that used for first potting.

Several of the *Primulas* lend themselves to pan cultivation, as *frondosa*, *rosea*, *Cockburniana*, &c. *P. frondosa* and *rosea* love shade and moisture during the summer, and if possible should be planted in a bed out of doors; where such conditions prevail it is well to work into the soil a fair quantity of leaf mould and peat for these. In October lift the plants with a ball and place in the pans as close as possible, using soil with a goodly admixture of leaf mould and peat.

Saxifrages, both the mossy and encrusted sections, may be used. Nothing makes a more handsome pan than *Sax. bathoniensis* or *Campsi* (The Pearl). Cuttings of the two named may be rooted in April and grown on ready for panning in the autumn, providing a fairly rich soil in the pans.

Saxifrages sancta, *apiculata*, *Elizabethæ*, *rocheliana*, &c., make perfect pictures in early spring. Of these fairly large clumps should be lifted from the open and panned up, using gritty soil with a fair quantity of leaf mould.

Campanulas muralis, *garganica*, *pusilla*, *carpathica*, &c., are very suitable for pans and of easy cultivation. Two year old plants of these are best. Plants which have been grown in a reserve bed will lift with little damage to the roots, and if placed reasonably close in the pans with a good leafy soil will make a fine mass for showing the following summer.

Myosotis Ruth Fischer, grown from cuttings or seedlings, will in a year make one of the loveliest of pans. This lovely Forget-me-Not is rather hard to keep through the winter, for it dislikes too much wet, so that a very gritty soil is essential, and it would be well to tilt the pan at an angle during dull wet weather.

Arabis aubrietoides, again, is difficult to winter, being very prone to damp off, but it well repays the little extra trouble entailed to get a good pan of it; abundance of sand and leaf soil, with a dry position in winter, will go a long way to nursing it safely to the sunny days of spring. Tilt this pan, as recommended for the above.

Androsace sarmentosa and *lanuginosa*, with their woolly rosettes and pink umbels of flowers, are very beautiful in pans. These require a very well-drained pan and gritty soil, and when being placed in their pans should be wedged in with small flat stones, as they love having their roots in a sort of crevice. Damp is their worst enemy, so the pans should be tilted to prevent moisture settling in the crowns.

The delightful *Arenaria balearica* makes one of the neatest and prettiest pans covered with its tiny starry-white flowers. Fill a pan to the brim with good garden soil and press tufts of the *Arenaria* firmly into the soil; it will very soon establish itself and cover the whole surface and down the sides of the pan.

Aubrietias Dr. Mules, Fire King, J. S. Baker, and *deltoidea ciliacea* are all good for exhibition in pans. Young plants give the best display. Root the cuttings in sandy soil as soon as they can be obtained, pot them off into small pots as soon as ready, and when again well rooted through the ball transfer to the show pan, using a fairly rich soil for the pan and placing the plants fairly close, so as to ensure the surface being well covered at the flowering season.

Several other showy subjects might be mentioned as suitable for exhibition, such as *Saponaria ocymoides*, *Arenaria montana*, *Draba aizoides*, *Gentiana acaulis*, &c.

Clumps of *Gentiana* should be panned in the richest of soil, but I find they flower better the second year after lifting, as the first year they seem to go more to growth than flower, as if building up for a great effort the following year.

In preparing pans for exhibition attention to a few minor details will greatly enhance the appearance of the exhibit. Pans should be scrupulously clean, all species and varieties correctly named, and where any spaces appear between the plants a few pieces of rough stone, carefully placed in, will help to show up the plants and give a natural appearance as if the plants were growing out from between the stones.

Primulas.

By W. H. PAINE.

DR. MACWATT, Morlands, Duns, N.B., staged many rare species of *Primula* together with *Auriculas*, *Polyanthus* and *Primroses* at the Chelsea Show.

The whole exhibit was put up in baskets, and the colour effect was wonderful for a stand devoted to one genus only.

The plants showed good culture, and the tone of colour was good in every case. *Primula glutinosa* and *P. Parryi* were in fine form. The latter is a deep glowing crimson-rose with bright green leaves. *P. muscarioides* and *P. deflexa* both very near, but the latter is covered with hairs on leaf and stem. *P. siberica* was bright. *P. suffrutescens*, a sub-shrubby species with deep pink flowers, was seen in excellent form. *P. Julie*, *P. decora alba*, *P. Forrestii*, *P. grandis*, and a previously unshown species—*P. capitellata*, an erect growing plant with white and blue, shaded flowers, were quite interesting. *P. Marven*, a beautiful hybrid between *P. marginata* and *P. venusta*, with mauve flowers and well marked eye. *P. Auricula* var. *ciliata*, *P. The General*, *P. Lissadell Hybrid*, *P. Munroi*, *P. luteola*, *P. mollis*, *P. pulverulenta*, *P. ciliata purpurea*, *P. ciliata coccinea*, and other better known species were shown to perfection.

The *Polyanthus* included Brilliant, a wonderful plant for colour; Gold Lace in fine style, and the blue-shaded varieties.

Among the old Double *Primroses* and *Polyanthus* were seen Pompadour, Cloth of Gold, Burgundy, French Grey, Harlequin, Tortoise-Shell.

The *Auriculas* were a very fine lot for so late in the year. The Shows and Alpines were very strong. The Border and old-fashioned Doubles were strong and bright.



CORTUSA PUBENS.

THIS species, from Transylvania, is not so well known as *Cortusa Matthioli*, but is much prettier. The downy leaves resemble those of *Primula Veitchii*; the flower stems rise 6 or 8 inches high, bearing beautiful drooping, bell-shaped flowers of a bright magenta.

Flowering Shrubs at Hamwood.

It was on a lovely spring day that I visited Hamwood, where Mr. Charles Hamilton has one of the finest collections of rare flowering shrubs in Ireland, the soil and sheltered position of the gardens being particularly suited to Magnolias and other delicate shrubs, some of which are, I am told, the finest specimens of their kind in the British Isles.

The garden, which is an old one, is divided into smaller ones by two fine beech hedges and several yew hedges. The beech hedges are known to be well over one hundred years old, as they were high hedges and a feature of the garden as far back as 1801.

These small gardens — devoted, one to China Roses, another to Peonies, a third to Tea Roses, and a fourth to Rhododendrons and Irises — add greatly to the interest and beauty of the garden, the two first-mentioned having a row of old nut trees which run along the south side, beyond which is a border of bamboos which make a very striking back ground. The other side of the wall which shelters the bamboos is covered with *Pyrus japonica* of all the newest varieties, Knap Hill Scarlet being one of the finest, and well worth growing, as indeed they all are.

The borders which run up the centre of the garden are entirely devoted to shrubs, and here are splendid specimens of *Magnolia parviflora*, *Watsonii*, *conspicua*, *tripetala*, *stellata*, and others. There is also a very fine *Viburnum rhytidophyllum*, which is supposed to be the largest in the British Isles.

In the little old-fashioned Rose garden, with its beds surrounded by box edges, is a tree of *Magnolia Kobus*, which when covered with its white flowers is quite a sight. Another feature of this little garden is the huge tree of *Berberis Darwinii*, which grows on the top of an old rock garden made over one hundred years ago.

In spite of the many new varieties of *Berberis* which appear year after year none have to my mind surpassed this for colour or profusion of blossom. Just over the wall, and also in full bloom is a tall tree of Waterer's Double Cherry, which is one of the oldest in this country, as it was planted by Mr. Hamilton as soon as it appeared on the market.

The east wall is devoted to Magnolias and *Pyrus japonica*: amongst the former are *Alexandrina*, *thompsoniana* and *grandiflora*; these all do particularly well, and the fine old *Wistaria*, which runs all along the south wall, has a stem which is nearly three feet across, and must be a wonderful sight when in bloom.

Near this *Wistaria* is the rock garden, where I noticed some of the rarer Alpines doing well, and healthy plants of *Helianthemum rosmarifolium*, *Veronica Hulseana*, and *Corvolvulus Cneorum*, which is quite three feet high and a very fine shrub.

Passing out of the garden one walks down the shrubbery, where the ground is carpeted with *Anemone apennina*, which has naturalised itself, and seeds freely all over the place.

It was originally brought here from Italy many years ago, and has made itself quite at home. Here also are some fine Maples, *Pyrus*, *Rosa rugosa* varieties, cherries, &c.

Philadelphus grandiflorus has assumed tree-like proportions, and is a marvellous sight when in flower: it measures 21 feet high by 38 feet in diameter. The old *Berberis Darwinii* is also a monster, for when measured was found to be 19 feet high by 28 feet through. Both of these fine specimens are in good health and still growing. Does any reader know of their equals?

As this article is supposed to be mainly about shrubs it is unnecessary to prolong it by describing any more of the well-planted grounds where are to be seen some beautiful pines and enormous beeches and other forest trees. — "VISITOR."



Photo by]

VIBURNUM RHYTIDOPHYLLUM [Miss A. Hamilton.

At Hamwood, 11 feet high by 8 through.

A New Pinetum

By A. E. MOERAN.

THE Marquis of Headfort has just completed the planting of a pinetum at Headfort House, Kells, which ought to take high rank, if all goes well with it, as one of the most carefully selected and comprehensive collections of Conifers in the British Isles. A short account of the general scheme and how it has been carried out would, I daresay, be of interest to many of your readers. Headfort House, with its wide flanking wings, stands big and imposing on a hill. On the west front a wide, close-shaven terrace gay with formal bedding, and then the green sweep of park land down to the placid Blackwater. To the right, some mile or more away, the spires and clustered roofs of Kells, seen through the tree tops, and across the river more park land, and fine old trees, and flanking woods to the

horizon. Right below the house is a wooded island of some nine acres, with one bold vista cut through the centre and sentinelled by stately Wellingtonias. This is the pinetum. Last autumn, to make room for the newcomers, all the inferior trees were marked and cut. A second inspection, when this was done, resulted in the marking of further trees, leaving only the finest—chiefly oak, but with a few of those grand silver firs for which Headfort is famous. The ground was then thoroughly cleared of branches and briars, and was ready for planting in February.

But long before that Lord Headfort, who takes the keenest interest in the whole enterprise, and whose knowledge of trees would put many a forester to confusion, had been compiling his lists of trees to be planted. There is more trouble in this than anyone would believe who has not tried it. To avoid the confusion that exists among nurserymen and foresters in nomenclature, that of Kew was rigorously adopted. Advice was asked from Kew and

Glasnevin, from the great nursery firms, and from many private tree lovers, and all loyally responded, and so at last the lists were complete and the trees personally selected by Lord Headfort. Their arrival was timed for a committee meeting that developed itself upon the island. Sir Frederick Moore, of Glasnevin, and Mr. Bean, of Kew, came specially for it. First the centre ride was pegged out right through—66 feet wide of green grass—no thrusting tree to infringe on this. A cross centre ride was also engineered straight in line with the view up the river from the public bridge by the great entrance gates on the Kells-Drogheda road.

There are some 246 different species and varieties to be planted; for each of these there is an iron label with spike, and with the name of the tree plainly stamped in raised letters on it. Each family is to have its own special area, and this is carefully considered. The pines are given a fairly high gravel ridge; the



Photo by]

THE APENNINE ANEMONE
Bordering the Drive at Hamwood, Co. Meath.

[Miss A. Hamilton

spruces some flat moist ground, but sheltered; the silver firs adjoining, but on drier soil. Shelter from the wind for the tender, sun for the delicate, shade for those that like it—all has to be taken into account. Then the labels are taken and each is stuck into the ground where that tree is to be planted, a dozen questions arising over every site—spread of branches, side shade, exposure, contrast or harmony of colouring, height grown and so on. It took two busy days, with willing helpers, to get all this done, but those that took part in it have, I think, the satisfaction of knowing that, as far as this, or any, site would allow, each different tree is given as good a chance as might be of turning into a healthy, happy, greatly-to-be-admired-by-future-visitors specimen. Naturally it is hardly to be expected that all the species will do equally well, gathered as they are from the four corners of the globe—the graceful *Pinus Montezumæ*, from beneath whose feathery shade Cortez and his daring band of adventurers looked wonderingly down on sun-

kissed Mexico, and the Siberian larch that takes and grimly keeps its frozen hold on those bleak steppes where neither man nor beast may look the north wind in the face and live—but trees have a habit of growing cheerfully in Ireland in spite of arguments that prove conclusively they won't.

After all were planted the ground was filled in with a few hundred Sitka spruce and *Thuja gigantea* to warm and shelter the more delicate and slower growing trees. These, of course, are to come out as they close in on the specimen trees.

Waterside Irises.

By J. W. BESANT.

THE universal taste for outdoor gardening in its many phases has led to a freer and more natural use of many hardy plants than was wont to be the case. Nowadays, the marshy margins of ponds, streams and lakes provide a happy home for many beautiful plants which do not always flourish so well elsewhere. And, not only are the plants well suited under such conditions, but they add enormously to the charm which water always gives to the garden, large or small.

I do not propose to deal with the whole genus, but rather to direct attention to such species and varieties as are found to flourish under the moist conditions alluded to above.

Perhaps the first to occur to us, as it is also one of the first to flower, is the common Yellow Flag Iris, *I. Pseudacorus*, which brightens many a streamside and backwater, and is well worth introducing to our gardens in districts where it is not naturally plentiful. Of this there are at least two varieties, for ordinary purposes, perhaps, not superior to the type.

It is to exotic species, however, that we look to give us the more gorgeous effects, borrowed from lands where the sun shines brighter, and yet willing to unfold their beauty under our oft-times dull, grey skies.

It may be well here to say that all the water-loving Irises like a rich compost to grow in, and although it is neither necessary nor often desirable to replant every year, yet the rich condition must be maintained by annual dressings of manure in some form or another. At Glasnevin, cow manure is found efficacious, and in the case of the Japanese Iris, *Kämpferi*, it is applied as a mulch in spring. The manure is mixed with some good, turfy loam, and in company with the Irises, *Primula rosea* and *P. pulverulenta* delight in similar treatment, all growing happily together. While treating of the Japanese Iris, it may be well to state that the soil and water at Glasnevin are both strongly impregnated with lime—this in view of the fact that it is sometimes asserted that lime is distasteful to *Iris Kämpferi*. Of this Iris, which bears the largest flowers in the genus, there are very many beautiful varieties. These can be purchased separately in colours, and are capable of gorgeous effects towards the end of June and in July. Mixed seedlings can be bought cheaper, and are scarcely inferior to the named sorts, giving any amount of fine flowers in several colours. The chief colours in the cultivated forms of the Japanese Iris are white, blue, lilac, blush, the whites sometimes suffused or edged with rose, and the blues and lilacs mottled with white.

W. R. Dykes, M.A., an acknowledged authority on Irises, gives the colour of the wild *I. Kämpferi* as rich velvety red purple, and the pity is we do not know it better in our gardens.

Next in importance for massing by the waterside I would place *Iris sibirica*. Unlike *I. Kämpferi*, this has rather small flowers, a defect, if it may be so, more than compensated for by the profusion in which they are produced. The effect of a large colony of the Siberian Iris when in full flower is something to remember with pleasure long after the flowers are gone. What for garden purposes may be taken as a typical form has rigid spear-like leaves and bright blue flowers, but there are other forms with almost pure white flowers, and blue forms more conspicuously veined with white. *I. sibirica orientalis*, a more eastern form, is by some authors claimed as a true species. It has larger flowers than *I. sibirica*, and for garden purposes is a superior plant. Of it there are two superb forms, known as Blue King and Snow Queen respectively. These latter are well worth planting in quantity, and will give a truly delightful display in June.

Iris laevigata, a name formerly used for *I. Kämpferi*, Mr. Dykes has shown to belong to another plant represented in gardens to-day by *I. albolopurea*: this has very fine white flowers mottled with blue, and is quite a desirable plant, sure to become popular as it becomes more plentiful.

Iris aurea from the Western Himalayas is a very handsome species which succeeds well in moist places where the roots can reach the water. It is a tall grower, reaching 3½ to 4 feet when in flower, with strong, handsome leaves, and beautiful bright yellow flowers. Of similar growth, and rejoicing in like conditions, are *I. Monnierii* and *I. orientalis*, sometimes known as *I. ochroleuca*, the former with large yellow lemon flowers, and the latter yellow and white. *I. ochroleuca gigantea* is a giant form of quite remarkable appearance when in flower. There is also a very fine white variety of *Iris ochroleuca*—viz., *Snowflake*—which has beautiful glistening white flowers, with a yellow spot on the falls.

These tall-growing Irises crossed with each other have produced some very beautiful hybrids, quite as useful for moist positions as the parents.

I. ochraurea, a child of *ochroleuca* and *aurea*, is a handsome form, reaching about 5 feet in height and producing fine flowers with yellow falls which are paler towards the margin. *Iris Monaurea* is a very strong growing hybrid, bearing large deep yellow flowers; a group of this is most effective. *Iris Monspur* is the result of crossing *I. Monnierii* and *I. spuria*, and takes after the latter parent in producing soft blue flowers of wonderful effect. There are several forms of this hybrid, of which Dorothy Foster, violet and blue, and A. J. Balfour, with large deep violet flowers, are typical.

Iris spuria, alluded to above, is apparently a variable plant as botanists know it, but in its best forms is a good sort for the drier part of the bog garden, where there is abundance of moisture in summer, but not too much in winter. The flowers are of various shades of violet-blue, and look extremely well in mass.

Iris Delavayi, a Japanese species, is one of the most beautiful and striking kinds we have for a really moist position. When doing well, it will reach a height of at least 4 feet, and bears handsome deep violet flowers blotched with white.

Iris fulva is a peculiar Iris in more ways than one. The flowers are of an unusual terra-cotta colour, produced late in June and July, and the plant seems to grow well either in a damp or dry position. At Glasnevin it grows and flowers on a dry sunny border, and does equally well in a very wet portion of the bog garden, but exposed to full sun above. It is worth trying in a moist

position for the unusual colour of the flowers, which have even been described as coppery maroon. It hails from swampy places in the S. E. States of America.

Iris Hookeri, a comparatively dwarf species, has rather showy bright blue flowers, with only rudimentary standards. It will grow and flower in a sunny border, but is at home in the bog garden.

Iris versicolor and its varieties are first-rate waterside Irises, quite delightful in the quaint colour variations of the flowers: claret red, rich purple, reddish purple, lilac, and mauve are some of the more prominent shades, while some varieties are beautifully veined with white and yellow.

Three new species from China, partaking somewhat of the habit of *I. sibirica*, are *I. bulleyana*, *I. Forrestii*, and *I. Wilsonii*. All have yellow flowers, and appear likely to do well in moist positions where the colour and habit will be welcome.

Although recommended for moist positions near water, most of the Irises alluded to in these notes will do very well in a deep, cool and rich border.

Hints to Amateurs.

By R. M. POLLOCK.

STAKING.—There is more art in the staking of plants, and more especially in the staking of outdoor plants, than might be thought. If this important branch of garden work be left too late the plants can never be made to look natural. The size and strength of the stake and the tying material should correspond with the strength of the plants they have to support. It is far easier to stake plants before they are fully grown, at any rate before they have got heavy in the head and been beaten and blown about by wind and rain. General observation will show what class of plants will require staking, and with any new plant whose character is not known, its habit can easily be ascertained by reference to the catalogues. Carnations are among some of the most difficult subjects to stake, and still they must be staked, as otherwise their flowers are quite spoiled by lying on the ground. Delphiniums, *Aconitums* (Monkshood), Oriental Poppies and many more will require strong supports, and should be staked at once.

ANNUALS.—The late sown annuals will be large enough now to thin out, and the earlier sown ones will, if the weather be dry and harsh, benefit from waterings of plain water followed by weak manure water. All artificial watering is inclined to cake and harden the surface soil, and when so caked it should be stirred gently with a small hand fork, without disturbing the roots. The hoe is an essential implement in a garden, and at this season should be in constant use between the plants. Weeds grow at an appalling pace in showery weather, and unless removed before they seed the work will be doubled later on. The hoe is also useful to stir up the soil in beds and borders.

DAHLIAS planted out during the end of May will have to be watched carefully for slugs. A ring of soot round the neck of the stem will keep them away. The shoots should be thinned out, removing the weaker ones and leaving four or five of the strongest, which should be firmly staked.

SWEET PEAS.—If the weather is dry these will require plenty of water, and when watering see that it is done thoroughly, so as to soak right down to the roots. Continual dribbles on the surface are of no use, and only help to cake the surface soil. Manure water, soot water or weak

doses of nitrate of soda may be given as soon as the buds appear, but none of these should be given except after rain or a good watering of plain water. Sweet Pea flowers should be picked as soon as they open, for if allowed to form their seeds the flowering season will be greatly curtailed.

Any bedding out not finished should be started as soon as possible. June is late for it, but where bulbs are occupying the beds it is very difficult to get it done earlier. In the case of *Narcissus* or Tulip bulbs, they can be lifted, and put in shallow trenches in a reserve corner of the garden and left there until the foliage dies away, when they can be lifted, dried off and put aside until they are again wanted to fill the beds. See that newly planted stuff does not lack for water.

Rock plants that have gone out of flower should be cut over, unless seeds are wanted, and tidied up. Where this is done the rock garden or the rock edging never has an untidy look. Something else will soon be out, and the flowers that were cut away will not be missed. This refers to such plants as *Aubrietia*, *Iberis*, *Alyssum*, the mossy *Saxifrages*, and many more.

All old flowers should be removed from *Violas* and *Pansies*. This will increase the length of the flowering period considerably, and will also keep the plants tidy. The old flowers of *Rhododendrons* should also be removed so as to prevent the plants forming seed. It is not, of course, possible to do this to the large plants, but with anything very special, or with young plants, it is advisable.

Strawberries will be ripening fast, if the weather be at all favourable, and the benefit of the straw will be easily seen. All runners which are not required for increasing the stock should be removed. If these are required, only keep the strongest, and let them root into the ground between the plants. Some people prefer to sink pots between the plants and root the runners into these and remove them later on.

Where grapes are forward they will require thinning. Great care is necessary in this operation, as the least prick of the scissors will leave a dark mark on the fruit. When about the size of small marbles they are fit to thin, and each bunch should be left with plenty of room for all its berries to swell. The cool of the evening will be found the best time for this work, as it is unpleasant working close to the glass on a hot sunny day.

GREENHOUSE.—Ferns that have lost their colour and got yellow from being too long in a dwelling-room can be restored to health by occasional doses of soot water. Worms in pots can be removed by watering with lime water, providing the plants are not lime haters. A watering once a fortnight with these two solutions would be quite sufficient. *Cinerarias*, *Primulas* and *Calceolarias* may be sown for the early spring display. Water the soil before sowing in the pans or pots and cover with a sheet of glass, which can be removed as soon as the seeds have germinated.

See that all plants in the houses are free from fly and see that the house is not too dry. Occasional damping of the floor during a bright day will keep the temperature sufficiently moist, but plenty of air should be given at all times where ordinary greenhouse stuff is being grown.

The *Chrysanthemums* may now have their final potting. See that the drainage is good, as they have to stand a long time in these pots.

Azaleas, *Genistas*, *Prunus* and any other spring flowering shrubs may be stood out of doors in a sheltered spot to ripen their wood and to leave room in the house for the summer plants.

The Ghent Exhibition.

By SIR F. W. MOORE, M.A.

SINCE 1808 the Union of Ghent Nurserymen has promoted and brought to a successful conclusion, a quinquennial International Flower Show, an event which always has excited much interest in horticultural circles, and which invariably has drawn together a number of experts and enthusiasts from all countries. The show which has just terminated was no exception in this respect, its international and cosmopolitan character being fully maintained. It has fallen to the lot of the writer to see seven of these shows, and if comparison be permissible it may be said that the 1913 show in point of excellence of cultivation, of artistic and bold grouping of plants, and of fine scenic effect, was quite equal to any of its predecessors.

In point of general interest and of new and rare plants shown in all classes except Orchids, there is a distinct falling off. For instance, in taking a general view of the plants exhibited a few only struck the writer as likely to be heard of in the future in Ireland, or to be generally useful for cultivation in this country. There were (1) *Camellia* Fred Sander, shown by F. Sander and Fils, Bruges, a fine semi-double dark red-flowered variety, the petals charmingly and loosely arranged, nicely crimped, foliage small, elegant and glossy, habit compact, plant very floriferous. *Camellias* are quite hardy in most parts of Ireland, and thrive in soils free from lime, and as this is a late flowering variety, it will probably escape spring frosts. (2) *Paeonia* la Lorraine, a full double pale yellow-flowered *Paeony* of the Moutan type, shown by Mons. Lemoine of Nancy. This is quite a unique colour in Tree *Paeonies*, and the plant is in every way charming and desirable. It was one of the best things in the show. (3) *Azalea* "Blushing Bride," a delightful soft pale flesh pink *Azalea indica*, with large double well-shaped flowers, good large foliage, and nice free habit. This is in every respect a desirable plant, and is certain to make its mark, and to retain its position as one of the best of the evergreen section of *Azalea* for decorative purposes. Several groups of it were exhibited, and each group was surrounded by

admirers. *Azalea indica* has so long been grown as an indoor plant that it is scarcely recognised that most of the varieties are quite hardy in the milder parts of Ireland, especially in moist and sheltered situations. Should this new variety lend itself to outdoor cultivation it will be a welcome and much valued addition.

The Ghent Show is essentially an *Azalea* show; indeed it may be said that it is chiefly in the interest of *Azaleas*, the staple article of Belgian horticultural enterprise, that this great show is always held in the latter part of April, and in whatever other directions there may be signs of decadence, there is improvement each quinquennial period in *Azaleas*, improvement in quality, in type of plant, and in cultivation. This year's show is no exception, the only falling off being in large specimen plants, for which, chiefly owing to their unwieldy size and the difficulty and expense of housing and handling them, there is a diminishing demand.

Some idea of the dimensions of the *Azalea* exhibits may be gathered from the fact that the groups covered over two and a half acres of space in the large hall, and the general effect can be judged from the illustrations in these pages. They were there in all shapes from the usual flat-headed Continental type to the sharp-pointed cone, in all sizes, from the



THE LARGE HALL AT THE GHENT EXHIBITION.

small plant for table decoration to large half globe-shaped specimens 5 to 6 ft. in diameter, in all *Azalea* colours from pure white to deep red, and a wonderfully striking effect was the result. The only other group of plants in which advance was shown were the Orchids, and in these the advance is even more marked. The groups shown in 1913 were beyond the wildest dreams of exhibitors, say 25 years ago, in 1888, and this great change is chiefly due to the skill of the hybridist. The most striking plants were those of garden origin. Vuylsteke's *Odontoglossums* and Pauwels *Cymbidiums* attracted much attention, and were deservedly admired. Two Orchids which excited enthusiasm, and I may safely say also envy, were in Mons. Jules Hye de Crom's group. *Miltozia* Jules Hye de Crom, a lovely pure white variety, with a dark deep red eye, was probably the finest and most valuable Orchid in the whole show. *Cattleya Schroderae* var. *Louise P. Pauwels* is by far the finest white *Schroderae* known up to the present. The

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flower is of perfect shape, pure white, with a rich yellow mark on the throat of the labellum. It may be safely said that £1,000 would not purchase these two Orchids. The most marked change was in the great groups of stove plants, and of Palms and Cycads, for which Ghent was formerly famous. It would still be famous if only for such groups as were exhibited had the spectator not seen, or heard of, the groups of twenty-five, thirty or forty years ago, when these plants were in full popularity. Their decline in popularity marks the change in horticultural fashions. Carnations, Roses, and other cool house decorative plants reign in their stead. The exhibitors give conclusive evidence that they have not lost their cultural skill, as the group of forty specimen stove plants, and the great group of palms, which won first honours in their respective sections were in a high degree meritorious, and could probably not be equalled in any city other than Ghent.

The illustration gives an excellent idea of one of the groups of Palms and Cycads. Other groups which deserve commendation were the Hydrangeas pure white, rose, and deep blue, Begonia Gloire de Lorraine, perfectly grown, well flowered fresh and clean for so late in the season, and after their journey from Holland. In general the florists' plants such as Cinerarias, Primulas, &c., were decidedly poor and below exhibition standard.

A most instructive feature was the exhibit of trained fruit trees shown in the open air where they are to remain for the rest of the season. The exhibitors were mostly French, and they have upheld the credit and skill of their country in no uncertain fashion, as every type and variety of trained tree can be seen, in all stages, from maidens to fully finished and furnished specimens 20 feet high.

If one may take the liberty of closing this very brief description of the great Ghent Quinquennial International Horticultural Show of 1913 with a comparison it may be said that the Chelsea Show of last year was superior in many ways, inferior in several, and that Ghent as compared with London, while much grander in spectacular effect, was greatly inferior in general interest to the average lover or owner of a garden.

Trial of Spraying Machines at Wisley.

OFFICIAL REPORT.

UNDER the arrangements made by the Council of the Royal Horticultural Society for the trial of horticultural sundries this year, a special trial of spraying machinery apparatus was organised. It took place at the society's gardens at Wisley on Wednesday, April 23. The following are their recommendations, which have been approved by the Council:—

SYRINGES.—Commended: Puiiser's Arrol Sprayer, No. 2; and Corry's Syringe. Award of Merit: Four Oaks' Undentable (Angle Bend excluded); and Abol Syringe, E. A. White, Lim.

BUCKET SPRAYERS.—Award of Merit: Boundary Company, Demion Continuous Spray Bucket Syringe.

CONTINUOUS PUMPING KNAPSACKS.—Highly commended: Four Oaks' Centre Knapsack Pump. Award of Merit: Abol, E. A. White, Lim.; and two Continuous Knapsacks, Eclair No. 1 and Etame, Cooper, Pegler & Co. Commended: Benton & Stone's Continuous Pumping Knapsack.

LARGE PNEUMATIC SPRAYERS.—Highly commended: Hartjen Battery Filler and Holders.

LARGE CONTINUOUS PUMPING SPRAYERS.—Highly commended: Four Oaks' Large Continuous Pumping Battle Sprayer. Commended: Utility; Benton & Stone.

HAND DIFFUSERS.—Highly commended: Alpha Hand Diffuser, Alpha Extinguisher Company; and Hand Diffuser No. 1,807, Benton & Stone. Commended: Vermorel Hand Diffuser, Cooper, Pegler & Co.; and Holder Hand Diffuser, Hartjen.

NOTE.—Four Oaks' Nozzles, highly commended.

The Judges considered the provision of means of carrying accessory nozzles on the hand syringes would be a great improvement. None had such a provision. In using some spraying materials the provision of a strainer on the intake nozzle would be an advantage.—W. WILKS, *Secretary*.



PALMS AND CYCADS AT THE GHENT EXHIBITION.

The Origin and History of our Garden Vegetables.*

THIS little book will be of interest and value to all those who grow vegetables; it traces the history of our garden vegetables from antiquity downwards, in many instances giving the derivation of names. Some were known in the days of Theophrastus of the 4th century, B.C., Pliny wrote about several in the first century, A.D., while in the middle ages Herbals were written from which some of the illustrations in the book are taken.

It also shows how the plants have varied under cultivation, or have been developed in many instances from our own wild plants. In most cases the plants were first grown and collected for their medicinal properties, their use as drugs passing probably to use as salads, and then to culinary usage.

Wild celery or marsh parsley which grows in our ditches and streams, used as a drug in olden times, is injurious to eat. It is said that not until about the year 1670 was it blanched, whereby the unwholesome properties disappeared and it was rendered palatable.

The power and effect of cultivation and selection is strongly shown in this little book. We learn how from the wild perennial beet of our seashores the garden beet, and even the mangold wurzel, have been developed. A perennial plant thus being turned into a biennial by cultivation and selection, while in the case of the carrot life is prolonged, an annual being turned into a biennial.

Commercial Gardening.†

ALTHOUGH several smaller works have from time to time appeared dealing with fruit, vegetables and market crops, yet there was no really comprehensive work to which anyone starting in business could refer to in time of need. The task of editing such a work is not a light one; fortunately it fell to the lot of Mr. John Weathers to undertake the duty, and he brings to the subject a ready pen, a life-long experience of gardening, and a good knowledge of the principles and science which underlie garden practice and an acquaintance with the commercial side of gardening.

"Commercial Gardening" is issued in four volumes, super-royal octavo, strongly bound in cloth, and runs to about 1,000 pages. Well printed, abundantly and thoughtfully illustrated, the work stands out as one of great importance and reliability, and may be easily read and understood by everyone.

Including the editor, there are twenty contributors, who are authorities on the special branches upon which they write. Some of our so-called practical books are written or compiled by those with a ready pen and only a nodding acquaintance of the subject; it is not so in this case, for names such as Messrs. Bear, Cragg, Engelmann, Lobjoit, &c., tell us that the cultural articles are the real thing. These writers are some of the leading market-growers, who are making, or have made, their livelihood from their business ability and success in growing produce for the market, and they write as

* "The Origin and History of our Garden Vegetables." By Rev. Prof. G. Henslow, M.A. Published by Royal Horticultural Society, Vincent Square, London. Price, 2s.

† "Commercial Gardening." Edited by John Weathers, F.R.H.S. (The Gresham Publishing Co., 31 and 35 Southampton Street, Strand, London). 4 vols. Price, 7s. each vol.

practical growers to practical men to show how gardening can be made a paying concern. This is the central idea of the book, although in order to give growers a clear and intelligent idea of the subject some scientific knowledge is imparted in such chapters as "The Science of Plant Growing," by John Fraser; "The Science of the Soil, and Manures and Manuring," by the Editor. Then again the up-to-date grower has to know how to combat the various insect and fungus pests which attack garden and fruit crops. The two well-known specialists, Prof. F. V. Theobald, M.A., and Mr. George Massee, deal with the diseases of fruit, while in Vol. I. there is an article on "Insect Pests," unsigned, which contains a good list of the pests, with illustrations whereby they may be identified.

If Mr. G. Gordon in writing on the "General Aspects of Commercial Gardening" had given us something more useful on the "Hardy Plant Trade" it would have been advantageous, for this trade is a growing one, while "Japanese Gardening," to which more space is devoted, is lucrative to only a very few nurserymen. Space will not permit to detail all the excellent articles on greenhouse plants, bulb farming, hardy flowers, ferns, and the various vegetable crops, French gardening, glass-house building, &c., but mention must be made of Vol. 3, which deals with fruit. Here in an article on "Commercial Fruit Growing," Mr. Lobjoit deals with vital questions, not often attacked, concerning the tenant and the landlord of a fruit plantation and the conditions of a holding. Sir Frederick Moore contributes an article on "Fruit Growing in Ireland," while Mr. James Udale writes on "Fruit in Worcestershire," and the Scottish article on this subject is written by Mr. J. M. Hodge, of Blairgowrie.

We can congratulate the editor (who is an Irishman) and the publishers in producing a most useful and helpful work from which many will derive valuable information.

With Camera and Rucksack in the Oberland and Valais.*

TIME was when one's works on gardening were few. Robinson and Thompson were for years the sole occupants of a corner of my bookshelf until the coming of Miss Jekyll and her garden story books. Since then works of a similar nature have followed fast on each other's footsteps. No longer is it necessary for us to seek knowledge in purely technical works. We can put them on one side and take up instead works of travel, where, here and there, amidst descriptions of fascinating plant hunts and breathless mountain climbs we may glean the knowledge that is essential to the care and cultivation of our plants.

The works on Alpines alone have by now nearly filled one bookshelf, and the latest—by Mr. Reginald Malby—is now before me.

In it he describes his tours in the Oberland and Valais in search of Alpines suitable for purposes of photography and collection. His descriptions are so vivid and his photographs so helpful that, by their aid, even those of us who are not able to visit, in person, the scene of his travels can from our study chair follow him through the

* "With Camera and Rucksack in the Oberland and Valais." By Reginald A. Malby, F.R.P.S. Published by Hoadley Bros., Bishopsgate, London. Pp. 306. Price, 19s. 6d. net.

quaint villages and up the steep mountain sides, learning as we go up something of the mountain flora and its habits, while for those for whom a trip is possible, the book should prove an invaluable guide. Though full of useful hints to the initiated, it is exceptionally free from technicalities, and should prove interesting reading to anyone to whom descriptions of mountain scenery appeals.

The wonderful Botanic Alpine Gardens at Jaysinia and Pont de Nant were visited, and are fully described, and there is also a chapter devoted to the art of photographing flowers in nature and the necessary equipment.

The book is full of illustrations, both of places and plants; the photogravures and monochromes are excellent. I do not think I have ever seen better or more instructive reproductions of growing plants; but there are also reproductions in colour which one could well do without; they are similar to, but I do not think as good as, those coloured picture postcards one gets abroad (some of which were used as illustrations of a recent work on Alpines), and the other illustrations are so exceptionally good that the somewhat indistinct coloured reproductions suffer by comparison.

I imagine that the book will be widely read, as it is a most interesting addition to the rock gardeners' library. M. H.

The Hardy Flower Book.*

THE volume before us adds yet another to the long list of works dealing with hardy and other flowers. It is essentially a book for the young gardener and the amateur. The professional gardener who knows his business may not find much that is new in the matter of cultivation, but he may find many helpful suggestions in how to make the best use of the wealth of material now available.

The book is divided into three parts, each containing numerous chapters or sections devoted to the various operations connected with hardy flower culture. The author is thoroughly practical, and begins at the foundation—that is, with the preparation of the soil. Different classes of soils are skilfully dealt with, and we are glad to note that in writing of trenching Mr. Jenkins advocates placing the top spit in the bottom and bringing the second spit to the top—this is the only right way to trench, and does at one operation what otherwise would take years, viz.—gives several feet of rich soil at once. We do not quite agree, however, that it is good to ridge heavy, retentive soils in winter, as by so doing furrows are formed in which rain and snow will remain long enough before soaking away. A heavy soil, with a level unbroken surface, will be full of worm holes, each kept open by a twig, leaf-stalk, &c., and rain passes through such like water through a sieve. Often we have seen a bed of heavy soil dug in spring and ready for working long before the beds dug in autumn.

The author, we think, favours autumn planting for most things, and we are in agreement with him, though he rightly says many herbaceous plants may be planted in spring with good results if given reasonable after-treatment. Some few kinds, such as Christmas Roses, Mr. Jenkins lays down definite rules for transplanting, but

we must refer the reader to his book as the only fair way of learning the secret of success.

Chapter III. deals with flowers for the mixed border, and is full of interesting and useful matter well illustrated. The next chapter, dealing with hardy flowers for the shrubbery border, we do not care about. Shrubs are as well worth special cultivation as herbaceous plants, and with the immense number to choose and select from, need no herbaceous plants mixed up with them. A few groups well placed may be all right, but it is easy to overdo this sort of thing.

The chapter on wild gardening is really well written, and contains many suggestions for happy associations and effects. Chapter VIII., on hardy florists' flowers, is very good, and the next, dealing with effective border grouping, is full of interest, with numerous illustrations. A diagram of the large border at Westwick is given where the narrow grass verge and 6 feet wide path look all too narrow for the apparent width of border. Figure 20 is a much better balanced picture. With reference to the number of years a clump will remain in good condition, we would point out that thinning out of all weak shoots when a few inches high is very essential, and prolongs the vigour of the clumps over a good many years. This is particularly so with many of the taller-growing kinds.

The chapter on propagation and the first section of part two dealing with the most important and beautiful hardy flowers should be carefully studied; not often in works of this kind is the propagation of plants so well written.

Part III. embraces selections of hardy flowers for various situations, for flowering at different periods, for show purposes, and includes a select list of bulbous and tuberous-rooted plants.

The illustrations throughout are very good indeed, numbering fifty in all. The print is large and clear, but the glassy paper makes it somewhat difficult to read by lamplight.

This is a good book written by a well-known expert, and can be fully recommended to hardy flower lovers. It is edited by F. W. Harvey, editor of *The Garden*. J. W. B.

Primula pubescens alba.

THIS attractive Rock Primrose is one of the most desirable of the family. When quite happy early April finds it covered with snowy white blossoms borne in dense clusters or umbels on sturdy little stems just rising above the foliage. The individual flowers are almost funnel-shaped, and the leaves are obovate and toothed. Given a cosy little pocket in the rockery it will prosper in sun or partial shade. Loam, with a little leaf mould, or loam and peat, will be found a suitable compost, while to prevent April showers from soiling the flowers the soil may be covered with stone chips. After flowering the plants may be divided every few years to increase the stock.

Often in gardens and catalogues this plant is to be found under the name of *P. nivalis*, a name which really belongs to another *Primula*.

Primula pubescens, according to botanists, covers the crosses of *P. Auricula* × *P. hirsuta* and others, so that *P. helvetica alba*, another beautiful white *Primula*, comes under this sweeping heading. However *P. helvetica alba* is quite distinct for garden purposes, it flowers later than *P. pubescens alba*, has larger flowers, which are wider open at the mouth.

Both of these albino forms are good growers and desirable plants.

* *Country Life*, Ltd., 20 Tavistock Street, Covent Garden, W.C. George Newnes, Ltd., 8-11 Southampton Street, Strand, W.C. New York; Chas. Scribner's Sons. Price 2s. 6d. net.

Some Good Calceolarias.

For greenhouse and room decoration few plants have so many attributes as the Calceolarias, especially some of those of recent introduction.

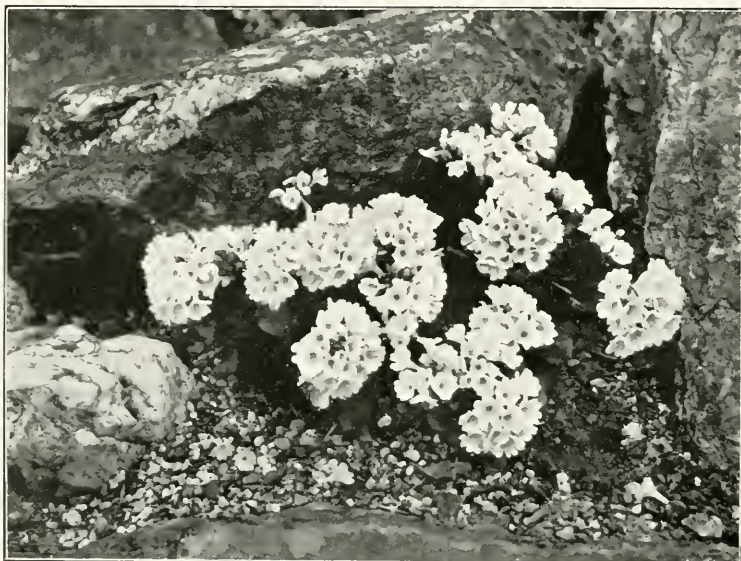
We would first call attention to *C. Buttercup*, a graceful and charming subject raised by Messrs. Veitch, of Chelsea, from the intercrossing of *C. Clibrani* and *C. Golden Glory*, and first exhibited at the Temple Show in 1910. It makes a splendid decorative plant, attaining a height from $1\frac{1}{2}$ to 2 feet, but it becomes much larger if grown on for a second year. From a batch of seedlings a variety of shades of yellow are obtained, and in some instances they are prettily marked and spotted with reddish-brown, especially on the undersides. The flowers are freely produced, and they remain in full beauty for many weeks, while it is very effective if planted out in a mass, but it would only prove hardy in mild districts.

C. Bronze Age is quite distinct from the above, the colour being various shades of mahogany-bronze and bronzy-crimson. It is of free bushy habit, possesses a robust constitution, a profuse bloomer, and reaches a height of $1\frac{1}{2}$ to 2 feet.

C. Clibrani is a popular and well known kind sent out by Messrs. Clibran, of Altrincham. It is a good grower, of a beautiful shrubby habit, and gives a wealth of its pale lemon yellow flowers, even from small specimens.

C. Golden Glory makes a fine greenhouse plant, while as a hardy Calceolaria it is held in high esteem by many hardy plantsmen. It is a rich yellow, and when in a thriving condition very free flowering. Seed is offered by various firms, but when an extra good coloured form is raised it is advisable to work up a stock from cuttings, which readily root in sandy soil if placed in a hand-light, and kept shaded for a week or so.

C. Veitchii, also *Golden Glory* and *Bronze Age*, were raised by Messrs. R. Veitch, of Exeter, the parents of the former being *C. alba* and an albino form of *C. Golden Glory*. A curious fact about *C. Veitchii* is that it is more robust than either of its parents, and is stated to be a true perennial, while its hardiness is assured in the neighbourhood of Exeter.



PRIMULA PUBESCENS ALBA.

See page 93.

No doubt it will be most valuable as a greenhouse plant, and examples raised from seed give a good account of themselves so far as flower is concerned, the first year; but, if grown on for a second season, large specimens are procured some 4 or 5 feet high. Such plants were exhibited at the International Exhibition, 1912, when they received an award of merit from the Royal Horticultural Society. The flowers are milk-white, and are produced in the greatest profusion.

RAISING SEEDLINGS.—The seed should be sown about May or even in June to get the best results, and on account of the extremely fine seed it requires careful handling. Well drained pots or pans prove the most suitable receptacles, and the soil should be put through a fairly small mesh sieve. Sow on the surface and just give the pans a gentle tap, then cover with a sheet of glass, and place on the north side of a wall or in a frame. When the second leaf appears prick off into pans or singly in small pots, and continue to pot on as the occasion arises, never allowing them to get into a starved condition. A suitable rooting medium consists of good fibrous loam one-half, leaf mould one-fourth, and the remainder made up of rotten cow manure

and sand, but the former must always be used in a dry state.

Calceolarias require a cool and shady spot at all times and ample ventilation, excepting very cold winds. They may be grown in a cool pit, frame, or greenhouse, giving only enough fire-heat to exclude frost.

Eight and ten inch pots are the sizes usually chosen for the final shift in February or March.

Greenfly is occasionally troublesome, but if the house or frame is vapourised with some reliable fumigant at intervals no harm will be done. It is best, however, to do it slightly, and if once is not sufficient fumigate two nights in succession.

SOUTHERNER.



DAISIES ON LAWNS.

BOTH moss and daisies on lawns may be killed by sprinkling, evenly and carefully over the surface, one ounce of finely-powdered sulphate of ammonia to each square yard of ground. This artificial is a good manure for grass, although at first it will turn the grass quite brown.

The Month's Work.

The Flower Garden.

By J. H. CUMMING, Royal Dublin Society,
Ballsbridge.

GENERAL REMARKS.—The first half of May being wet and cold, planting was much hindered, therefore no time should be lost during the earlier days of June to finish up. Everything that is intended for outside planting may safely be done now. If cold winds follow the putting out of tender subjects, for a few days a protection of spruce branches stuck in the ground on the windy side will be a comforting shelter. An air of tidiness should now be maintained. See that the lawns are kept mown and grass edges trimmed. Creepers on walls and trellis work need attention with the growth now in full vigour. An odd tie here and there will save injury to tender growth. Store away empty boxes and pots. Pelargoniums, Fuchsias, Heliotropes, and such like, growing in tubs which are filled with their roots, should be supplied liberally with water and an occasional application of diluted liquid manure.

PYRETHRUMS will be getting over their first crop of bloom. Cut them back again to within six inches of the ground, when a late autumn display will come forth. They may also be divided at this period, taking care to water the plants if the soil is at all dry. Cut blooms of *Pyrethrums* last long for decoration, and possessing a wealth of colour, are always popular.

STAKING.—Herbaceous borders may contain the best possible subjects, and planting done with faultless taste for colour effect, and all rendered uselessly by neglecting to stake, or doing it in a wrong manner. It is generally done with one stake and a cord encircling the plant. Try, instead, getting at it without further delay and using any branchy stuff. Old pea stakes will even do. These placed in through the plants will support them without the aid of string, and the subsequent growth will completely hide the stakes. Carnations are best supported by spiral wires, which can be bought cheaply, and last for years.

WEEDING.—In last month's notes I sought to urge the diligent use of the hoe for keeping down weeds. It serves the purpose, too, of preventing evaporation when used to stir the surface soil, especially after it has been caked with rain. Even in some well regulated gardens, weeds get beyond the hoe being of any use, and hand pulling must be done. In a flower border I have seen the weeds being pulled out and flung on the walk, thereafter to be raked up. This is a slovenly practice, and means sowing the proverbial seven years' weeding on the walk that could have been avoided. Have a basket or bucket always at hand, and take every care to prevent the seeds of weeds getting scattered about. The present is a good time to make war on the weeds which spring up on gravel walks and paths. The chemist has come to the assistance of the gardener in providing good weed-killers, and it is now possible to do in a few hours what formerly took days by the old plan. They must, of course, be used with care. Box and grass edges should have boards placed alongside to protect them during the time the weed-killer is being applied, the gravel having previously been drawn in a foot from the edging.

ANNUALS IN POTS.—Apart from their beauty when in the open ground, hardy annuals also

provide a delightful feature in the greenhouse when grown in pots. For filling gaps in the beds or making a temporary display in some desired position, the easy means by which this can be done will commend itself to those who pot up a good quantity of plants now. The pots need not exceed five inches in diameter, and after potting plunge outside in ashes or any light material till the plants are fully grown. Beds that may fail in the late summer can be quickly made presentable again if a good supply of some annual can be turned into it from pots.

WINDOW GARDENING is, unfortunately, not very well done in this country. During the spring and summer months it is refreshing to walk through even the poor quarters of our towns and notice the window boxes filled with flowering plants. Pity our town authorities could not be persuaded to encourage the working classes to take a keener interest in this phase of gardening. Window boxes are generally made of wood, the front being made rustic by the use of cork bark. The soil most suitable is a good turfy, sandy loam, with some rotten manure well mixed with it. The plants chosen should be those of brightest colours, and particularly those which hang over the front. Zonal and Ivy-leaved Pelargoniums, Fuchsias, Trailing Lobelia, Virginian Stock, Mignonette, and the Dwarf Nasturtium are all very suitable. Watering must not be neglected. Keep the plants clean by occasionally watering overhead, as they become dusty. Given constant attention, window boxes will be a delight to the owner and an adornment to the neighbourhood in which he lives.

FLOWERING SHRUBS are flowering freely this month, so it is a favourable time for note-taking for future planting. *Escallonia langleyensis* is a charming sort. It flowers on the terminal and branch shoots. Hybrid briars are also coming into flower, and young growths from the base should be encouraged. The *Philadelphus* may be thinned out after flowering, and pruning done in the spring. Some *Olearias*, too, require very little pruning, but if it must be done, then the best time is immediately after flowering. When selecting flowering shrubs it is desirable also to learn what pruning and treatment is suited to give the best results, as much depends on this knowledge for the annual crop of flowers.

The Fruit Garden.

By D. M'INTOSH, Gardener to Alderman Bewley,
Danum, Rathgar.

MID-SEASON VINES.—As soon as it is observed that the berries have stopped swelling, owing to the commencement of the stoning process, a slightly cooler atmosphere should be maintained. If the usual conditions of ventilation were to be continued, the vines would only make a lot of useless growth, which afterwards would require to be cut back whenever the berries again begin to swell. Lime, at the rate of one gallon to eighteen gallons of water, if applied to the borders at this stage, will prove most beneficial to the vines. Allow all laterals to grow until the second swelling of the berries commences. Afterwards gradually cut back all surplus growth and increase the temperature another 5° day and night, closing up the house early in the afternoons. Give the borders a dressing of some good artificial vine manure, and wash it well in with clear rainwater. A fortnight later mulch the borders with three inches of good, sweet stable manure.

PEACHES AND NECTARINES.—Trees in cool houses should have their young shoots tied in with raffia from time to time. Sometimes vigorous growing trees make thick gross wood, which considerably weakens other parts of the tree. This sort of wood should be cut clean away at an early stage, so that the sap in the tree may become more equally distributed. Syringe the trees every morning and afternoon in fine weather. If the borders are well filled with roots, copious supplies of water will be needed to keep the roots in proper condition. Farmyard liquid manure should be given once or twice a week, but to commence, care should be taken not to use it too strong, gradually adding to the strength as the season advances. Similar varieties outdoors should also be given due attention as to the tying in and regulating of the young shoots. If too many fruits are still on the trees, look them over occasionally, always removing the smallest and those situated in bad positions. Keep the roots of the trees well supplied with water, and when the fruits have attained a fair size, liquid manure may be given with great advantage.

SMALL BUSH FRUIT.—Bushes of the gooseberry that are heavily laden with fruit should have a reasonable thinning. Around the plants, for three feet outwards, mulch the surface soil with rotten farmyard manure. This will preserve the roots from drought, promote healthier foliage, and increase the size of the fruit. Black and red currants require similar treatment to the above, but no thinning out of the bunches should be resorted to, unless required for exhibition purposes. Raspberries, being an important fruit, must be given special attention at this season. Pull up all young suckers that will not be wanted, leaving the strongest and best to grow on. The surface soil between the rows must be kept stirred with the Dutch hoe, and should a spell of dry weather set in, apply a rich mulching of rotten manure.

THE ORCHARD HOUSE.—Apples, pears, and plums that are not required to ripen their fruits under glass should be plunged outside in a sheltered position with a south aspect. To each tree affix a stake as a protection against wind, and see that every fruit is made secure. It is always best to plunge the pots to about three-fourths of their depths, placing some rough cinder ashes at the bottom of each hole for the pot to rest upon. By so doing the tree will be prevented from becoming water-logged. Feeding with liquid manure should still be continued, say, once or twice a week. A bag of soot tied somewhat loosely, but securely, should be placed in the liquid tank, and be well shaken before the liquid is used.

The Vegetable Garden.

By J. G. TONER, County Instructor in Horticulture, Co. Monaghan.

INSECT PESTS.—Especially during the month of June there are many of these which deliver their attacks on various crops in the vegetable garden. The culture of vegetables not only includes the sowing of seeds, the digging and the enriching of the ground, but also the care in a general way of the growing plants in which may be included the matter of defending them from their enemies.

ONION MAGGOT.—This is perhaps the most serious matter with which those who cultivate onions from seeds sown in the open have to contend. To prevent the parent fly from laying her eggs, finely-sifted ashes, which has been sprayed

with paraffin oil, might be laid to the depth of half an inch and two inches wide on the soil each side of the rows.

CARROT FLY.—This vegetable, too, has its own particular enemy. As in the case of the onion, the maggots attack the roots and eat their way in. Soon the leaves become discoloured, and the plants die. Very often, too, those that survive and grow to a usable size are honeycombed and completely spoilt. The same treatment as advised for onions should be given.

CELERY.—Advantage should be taken of a cloudy day, and a showery one, too—there won't be much difficulty about it, perhaps—to get celery plants into the trenches. Any check of a serious nature has an exceedingly bad effect on the quality of this crop, however good the subsequent culture may be. In the event of sunny, hot weather, the work should be done as nearly as possible at the close of the day. Do not forget a liberal watering in the morning and after the planting has been completed. Nine inches to one foot apart is usually allowed, the former when only one row of plants is put in a trench, the latter when two or more are favoured.

CELERY FLY.—The eggs in this case are laid on the leaves, and the grubs enter between the skins, and eat away the substance between. By pressing them with finger and thumb they may be cut off in the flower of their youth, and those that would have developed into females be spared the trouble of finding nice fat celery leaves that were not partially covered with soot. The application of this useful substance in the evenings or mornings—when the leaves are moist it adheres well—generally prevents the laying of the eggs.

ASPARAGUS BEDS.—Periodical waterings with natural liquid manure will prove of much service to beds of established plants. In dry weather, plain water in sufficient quantity to thoroughly moisten the soil is advisable beforehand. Kainit, too, is an excellent form of artificial manure for this crop. So is salt, especially for young plants.

LETTUCE.—Sow lettuce seeds for succession in bunches six to nine inches at least apart. When they are large enough thin out to one at each bunch, and then the best thing to do is sow again, so as to keep up a supply. A little and often is a golden rule here.

MELONS.—Plants in frames will require careful ventilation, and little or no water. The lights should be closed up in good time before the sun has ceased to shine on them. A good deal of care, in the case of the inexperienced, must be taken that the atmosphere is on the moist side when the plants are growing, otherwise red spider will provide some trouble. Use the syringe or rosed watering can before closing in the afternoon. Rain water is, of course, the best, and it should be warmed before use. Pinch out the points of the growths if they are not showing female flowers.

TOMATOES.—There is always a sporting chance of getting a fair crop from the open, as, in many other directions, the weather is the deciding factor. They are worth trying in a warm, sheltered position. Make the ground very tight about them, and keep to the one stem by the simple expedient of picking off all side growths as soon as they push forth.

FOR GREEN CROPS.—Every available piece of ground should now be manured and made ready for the reception of Brussels sprouts, cabbages, broccoli, savoys, and so on, as these are now, or soon will be, fit for transplanting.

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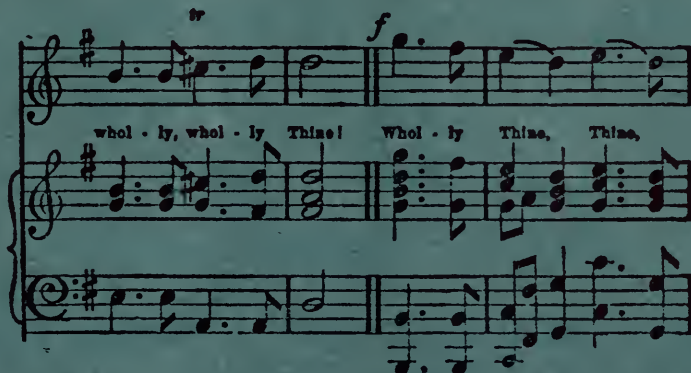
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ADVANCEMENT OF HORTICULTURE AND
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JULY
1913

EDITED BY C. F. BALL.

Chinese Plants at Aldenham.

By THE HON. VICARY GIBBS.

I PROPOSE to give a short account of some of the more attractive of the many trees and shrubs that have been discovered in China during recent years by Mr. E. H. Wilson and introduced into Great Britain.

I owe the possession of many of these to the kindness of Professor Sargent of the Arnold Arboretum, who sent me the seeds, and others I have obtained by exchange with Messrs. Veitch and other collectors. There is probably to be seen here as complete a collection of these novelties as anywhere in the world, but it would weary your readers and overload your magazine if I were to mention half of them. Mr. Wilson told me that he had taken pains to collect his plants from the highest altitudes possible, and consequently nearly all of them have proved hardy here. One can be quite sure that if they contend successfully against the cold clay sub-soil and late spring and early autumn frosts of this part of Hertfordshire, they will flourish in the milder climate of Ireland.

Actinidia chinensis is a fast-growing creeper, with short hairs closely set on the stem, giving it the look of a caterpillar; the young shoots are of a soft pleasing red. The Chinese are said to prize the gooseberry-like fruits very highly, but it is yet to be proved whether it will ever bear them in this country.

Alnus cremastogyne and *A. lanata* are two new strong-growing Alders which would make a pleasant addition to the garden of anyone who is fortunate enough to have water running through it.

There are several new Birches, but the two which, in my judgment, are most to be desired

are *Betula* No. 900, with a brilliant yellow brown stem, and B. 4299, which is a neat little scrub plant with small ribbed hornbeam-like leaf.

Cercis chinensis, as Wilson informs me, is a particularly fine form of Judas tree, but, unfortunately, it is not hardy with us, and has been killed to the ground both the last winters.

Coriaria No. 12.—This grows more freely than any of the three *Coriarias* hitherto in cultivation; it makes branches 6 to 8 feet long, and has red flowers on the last season's growth.

Cornus paucinervis is an attractive Dogwood, with small leaves and bright white flowers, for which I was fortunate enough to secure an award of merit when I exhibited a plant at the R. H. S. in Vincent Square a year or two ago. The other new *Cornus*, of which I have three or four, have not yet shown any extraordinary merit.

Corylopsis Veitchii is a good subject, flowers very freely, and in longer racemes than the old *C. spicata*.

Deutzia longifolia bears pink flowers in June, but *D. Veitchii* is superior, with deep pink blooms. *D. Schneideriana laxiflora* bears white flowers about a month earlier in the year. *D. Wilsonii* is one of the best, with large pure white flowers.

Dipelta floribunda is a fast growing deciduous shrub, closely allied, I believe, to the *Loniceras*, but with more external resemblance to a *Weigela*; the flowers are of fair size, bell-shaped, and pink and white in colour; they appear about mid-summer, but so far have not been very freely produced.

Elscholtzia Stauntoni grows, as I understand, on the great wall of China. It is a weedy-

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looking, nettle-like shrub, and its flowers, though profusely borne, are of a dirty mauve colour; their only merit, and it is a considerable one, is that they come in October when flowering shrubs have a scarcity value. It gets cut back nearly to the ground here even in a mild winter.

Hydrangea Sargentii also gained for us an award at the great International Exhibition in Chelsea, and Wilson gave me very warm praise of it as seen in its native habitat. Its large, thick velvety leaves and broad flat corymbs of flowers, with the white sterile blooms hanging out clear of the fertile violet ones, give it distinction: but it is a disappointing plant, and burns terribly in the sun.

bears no resemblance superficially to our Holly; the latter is more like it in colour of foliage and in the fact that it is spiny, but the leaves are far narrower and the branches are long, weak, and trailing, as if the plant were disposed to have a prostrate habit. I have no information as to the fruits of any of the three.

A plant for which I secured an award of merit at the R. H. S. two years ago is *Itea ilicifolia*. As its second name imparts, it bears a decided resemblance to a Holly in its foliage, and when covered with its white flowers it makes a brave show; it is, however, not truly hardy with us.

Juglans cathayensis.—Of this interesting new walnut tree we have a well-grown vigorous



[Photo b.1]

DAVIDIA INVOLUTATA

[Messrs. J. Veitch & Sons

A Chinese tree with lime-like leaves and large white flower bracts.

Among Hollies, Mr. Wilson sent seeds of *Ilex Pernyi* after one of his earlier exploratory journeys, and our biggest plant is now 4 or 5 feet high. This evergreen is not a fast grower, and though anyone would guess at first sight from its shiny leaves that it was a Holly, it is very distinct from our English species; it makes a neat, rather formal, pyramid, with weak and rather pendulous branches of uniform size. From the same source come two other Hollies, of which I have only small plants—viz., *I. Fargesii* and *I. corallina*: the former has long, very narrow riband-like leaves entirely spineless, the colour being dull green, lighter on the underside; it

specimen, aged about five. Last year it was obliging enough to fruit, and we were able to exhibit it with a bunch of nuts thereon at the Chelsea International Exhibition in May, 1912. It has long boldly cut pinnate leaves, with dark green oval leaflets; if it continues to thrive as it has done it should soon make a valuable ornament to the garden.

Ligustrum Henryi is, I think, the most effective of the Privets of which Mr. Wilson has sent us seeds: it makes a very neat, solid, compact, deciduous shrub with small dark leaves. There are, however, one or two other meritorious plants of this genus which we owe to his introduction,

and which are not yet named, but are after the style of *L. strongylophyllum* or *L. Delavayanum*.

Lonicera tragophylla is one of the very finest of the climbing honey-suckles, it is a strong grower, with large foliage, and its big, trumpet-shaped, rich yellow flowers appear towards the latter half of July. *Lonicera nitida*, on the other hand, is a dwarfish evergreen shrub of neat, upright habit and small shiny leaves; it was thought by some at one time to be a mountain

ham still less fruited, so as to its merits in these respects I am ignorant.

Paulownia tomentosa lanata (No. 769), of which the name has been announced in Part III. of "Plantæ Wilsonianæ," is a rampant grower; the seed of it was sown here in 1908, and now, in spite of having lost the top shoot each winter, it is a stout tree, over 20 feet high, bearing enormous roundish leaves 18 inches across. The flowers are said to be white instead of the purple



Photo by]

POTENTILLA VEITCHII

[Messrs. J. Veitch & Sons

A beautiful white-flowered shrub growing 3 to 4 feet high, flowering from May to October.

form of *L. pileata*, which was an earlier introduction of Mr. Wilson's. As these two have nothing externally in common with the climbing plants of this genus, it is difficult to realise that they belong to it. Since they are both quite hardy and strike readily from cuttings, they are likely before many years to become pretty common.

Meliosma Veitchiorum is a small tree with pinnate leaf, prominent showy buds, and unusual appearance. It has not yet flowered at Alden-

ones borne by the well-known *P. imperialis*; but, of course, it has not yet flowered in Europe.

Photinia Davidsonie is a handsome evergreen, of which the young growth is red as in the old and well-known *P. serrulata*; the leaves are smaller than in this last. It is said to be quite hardy, and doubtless would be quite at home in Ireland, but here it was considerably injured even in so mild a winter as that we have just passed through.

(To be continued.)

Exhibiting Decorative Roses.

By THE REV. J. H. PEMBERTON.

WE have already offered a few brief notes on showing the so-called "exhibition" Roses—those solitary specimen flowers grown one on a stem—whose merit is found in form and size. But there is a far larger class of Roses which must now claim our attention—a class more suitable than the purely "exhibition" Rose for the decoration of the garden, house, and person. These are known as "decorative" or "garden" Roses, and are usually exhibited in masses, several stems of one variety placed in a single vase, basket, or other receptacle. Broadly speaking, these decorative Roses fall into two divisions—namely, (1) dwarf-growing Perpetual flowering varieties, chiefly Hybrid Teas grown in beds on the lawn, and (2) Cluster Roses, grown as large bushes or up pillars, the majority of them being Multifloras and Wichuraianas, having only one crop of flowers in the year. There is more pleasure to be had in cultivating "decorative" than "exhibition" Roses: they are becoming more popular every year, and no Rose Society can be considered a progressive society if it does not provide in its exhibition schedules some classes for decorative Roses. Therefore the exhibitor, if he desires to move with the times, must cultivate decorative Roses for the purpose of exhibition.

I. A SELECTION OF DECORATIVE ROSES.

Out of the large and varied number of decorative varieties suitable for exhibition, it is exceedingly difficult to make a small selection, so much depends on the space available. But as forming the backbone of a collection one would certainly include the following:—

(1) *Dwarf Perpetual Flowering Roses*.—Ecarlate, Madame Leon Pain, Madame Abel Chate-nay, Prince de Bulgarie, Joseph Hill, and Mrs. Alfred Tate. These should be planted in masses—not just one or two here and there—because a bunch of one sort will be wanted.

(2) *Cluster Roses*.—Blush Rambler, Dorothy Perkins, American Pillar, Claire Jacquier, Hiawatha and Trier. The first five are summer-flowering pillar Roses, the last is a perpetual of bushy habit. Three plants of each will be sufficient to start with.

II. THE QUALITIES OF A DECORATIVE ROSE.

Before going further it is well to remember the merits and defects in a decorative Rose. The National Rose Society points these out in rules for judging. They are as follows:—The exhibit of each variety, whether shown in vase, stand, basket, or specified number of blooms in

a box or otherwise, shall be considered as a unit. In each unit the judges have to look for—(1) brightness (*i.e.*, colour, brilliancy, freshness); (2) form of flower (and a truss in cluster Roses); (3) foliage; (4) arrangement. Defects in a unit are—(1) disease (of flowers, stems or foliage); (2) damaged or dirty flowers or foliage; (3) faded or past blooms; (4) overcrowding, either in the exhibit as a whole or of the foliage or bloom, in each unit or truss.

Thus we see at once what to strive for and what to avoid. Many of the decorative varieties have single or semi-single flowers. The chief beauty of such lies in the freshness of the stamens. The brighter the stamens the more brilliant the bunch. Single Roses burst into bloom quickly; an apparently tight bud to-day will be wide open to-morrow; and, although the blooms may last for a day or two, yet there is only one day—in some cases only a few hours—in which the stamens will retain their brilliancy and not turn dull or black. Therefore, in cutting we must time the blooms, gathering them in such a stage of development that at the exact hour of judging the stamens will be golden—that is to say, the flower in question must be a bloom of the day of the show, a bloom just out.

III. CUTTING.

Let us suppose the show is to be held on a Saturday. Well, with regard to Roses in Division 1, the method of cutting will be on the lines advocated for "exhibition" Roses; they should, if we can spare the time, be cut on Friday afternoon. Bring the boxes with tubes of water to the bed, put the flowers immediately in water and convey them to the staging shed. Remember, never cut any Roses on the day of the show; they will not last. As to Roses in Division 2—Cluster Roses—they should all be gathered before seven o'clock on Friday morning. And here comes in the difficulty, because every morning by about six or seven o'clock all the blooms of the day will be out, and there will be no more out until the next morning. As a considerable time will be occupied in putting the sprays of Cluster Roses into bunches, cutting cannot be deferred until Friday afternoon, and we must certainly not gather them in the heat of the day, so cut them early on Friday morning. The blooms are fleeting, but with a little experience we shall find it just as easy to cut flowers of to-morrow or even the day after as we can the flowers of to-day. In the case of most Ramblers—Blush Rambler for example—the blooms of to-morrow, which are what we are searching for, are buds whose petals show colour—tight buds, with petals just pushing out of the green sepals. To-morrow's blooms of Una



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MADAME ABEL CHATENAY

This Hybrid Tea is a very free-flowering decorative rose with salmon-pink flowers, most useful for cutting, and deliciously fragrant. It is valuable for bedding purposes, flowers throughout the summer and late into the autumn, and does well in a town.

have the petals just parted at the top, whilst those of *Maerantha* and *Jersey Beauty* are cupped-shape. If cut in this stage on Friday morning they will be in perfection on Saturday morning by the time the judges come round. In selecting the sprays of *Cluster Roses* choose in preference those with as long stalks as possible. It will facilitate bunching up. But do not be tempted, for the sake of getting a long stem, to cut old hard wood. Roses on old wood stems will not get enough water; they will wither. We need not take any water to the bed or pillar. Lay the sprays in a flat basket or tray and convey them to the staging shed. Get them there as quickly as possible, cut the stems, and plunge them into pails or jars of water, where they can remain until all the varieties are gathered.

IV. PREPARING FOR EXHIBITION.

Before putting the sprays into bunches they must be thinned. Again let *Blush Rambler* be our example: cut out every flower that is open wide (the stamens will be black to-morrow). After thinning out all bad or past flowers, the sprays will have to be wired, so that we can the more readily adjust them to the bunch. Use florists' wire of sufficient strength to support the heavier blooms, especially those like *Gruss an Teplitz*, that hang their heads, but use the wire sparingly, and only when absolutely required. When all the sprays are ready make up the bunch. Do not crowd the bunch. Bear in mind that every bloom to-morrow should stand clear of the other. Keep the bunch from being stiff; preserve the natural beauty of the spray; avoid the tennis racquet style—we are not staging bunches of *Dahlias* or *Pansies*. The charm of a bunch of *Roses* lies in its natural gracefulness. It is not the size of the bunch, but the elegance of its arrangement, at which we have to aim. When the bunching is finished, cut the stalks again, and put the bunch in plenty of water. Leave it there until the time for packing arrives. It is most essential that decorative *Roses*, especially *Clusters*, should have a good drink before they travel.

V. PACKING.

It is unnecessary to carry decorative *Roses* to the show in water. Suppose we are travelling overnight by train. After removing the bunch from the water, pack some wet moss round the base of the stems; wrap the moss up in butter paper to keep it moist, and tie it. Lay the bunches flat and close together in shallow boxes. When thus packed they will reach the show next morning quite fresh.

VI. STAGING AT THE SHOW.

On reaching the show, which should be before seven o'clock in the morning, we shall find that most of the tight buds of yesterday morning have come out on the journey, and others are on the point of bursting. It is a charming sight, on removing the box lid, to see that comparatively dull green bunch that we made up yesterday so glorious in colour to-day. The first thing to do is to get the flowers in water with as little delay as possible. Be careful to cut every stem before putting them in water. Neglect of this frequently results in withered flowers by mid-day. Go over the bunch and cut out all blooms that are bruised or have black stamens. As the flowers have developed since they were first bunched up, there may be overcrowding; thin out where necessary.

With regard to the stands and vases there is no regulation pattern. Consult a trade exhibitor of decorative *Roses*.

Floral Arrangement.

To the making of a beautiful group of cut flowers, pleasant and satisfying to the æsthetic eye, many things are needful. Not merely lovely blooms and a bowl of water, as the uninitiated might suppose, but personal qualities which are nearly always things born and not made. An eye for form and for colour, a light touch, and a deft hand, and above all the real love of flowers which ensures delicacy and understanding in their treatment; these things are free gifts of the gods, and the lucky possessor of them is in no need of tuition in floral arrangement. But, alas! not everyone can boast of such natural talent, and we are, many of us, only too thankful for a hint or two to help us in our attempts at decoration in our sittingrooms and on our dinner tables. Let us learn a little in the first place from the Japanese, whose floral arrangements are always so beautiful and so artistic. The principal thing that strikes one is the extreme lightness of treatment—no heavy masses of flowers or foliage, no clumsy amalgamations of colour—a few sprigs of peach blossom set in a little tubular vase two or three *Irises* with a few of their own broad leaves, appearing almost as if they grew in their square porcelain jar. I am afraid one of these little Eastern artists would be very much horrified at some of the floral arrangements in our Western drawingrooms. Let us try to remember that more decorations are spoilt by too many flowers than by too few—neither is it necessary to have rare and expensive blooms. I have seen a beautiful table decoration entirely composed of common *Nasturtiums* with their own foliage arranged in low glass bowls and

vases. I know by personal experience that very beautiful results may be obtained at times when flowers are scarce by judicious arrangement of foliage *alone* in varying tones of green. A friend of mine living in the country kept her house beautiful during the planning and developing of her garden by foliage and ferns from a wood close by, using branches of dark blackberry leaves and trails of ivy with the lightest green of ferns and bilberry arranged in tall, wide-mouthed jars. Of course, in the autumn most delightful colour effects can be obtained. Nowadays, when for a few pence one can procure plain glass vases and bowls of all heights and sizes, there ought to be very little difficulty in arranging flowers tastefully and suitably on a dinner table. High centre-pieces, which prevent one from seeing across the table, are very unsuitable, and should be eschewed. It is also unwise to use large and heavy blooms and foliage. The lighter and daintier the flower scheme the better, and the receptacles should be as inconspicuous as possible. Personally I am not much in favour of drapery of ninon or silk as a table centre, but at times some such arrangement is almost necessary and may be used with great advantage to accentuate the colour of certain flowers and deepen the tone of a decoration, which might otherwise be rather characterless. Above all, let your foliage be suitable to the flowers used. It would be absurd to arrange Primroses with hot-house Ferns.

As I said before, an eye for colour is a great help when we come to flower decoration, and it is difficult to lay down any rules in this matter. Unless one possesses a special gift for the blending of colours it is far safer not to mix flowers at all, but to give each variety a vase to itself, and even then judgment will be necessary to avoid clashing, particularly in a small room. On a dinner table I think there can be nothing prettier than pink (light flowers such as Begonia Gloire de Lorraine, Sweet Pea, Ivy Geranium, or Rambler Roses, with Asparagus Fern or Maiden Hair Fern for foliage). Next to pink I give preference to a rather deep tone of lemon-yellow, not a crude shade. Some Daffodils are exactly the colour I mean. Pink or yellow light up beautifully, whereas blue, violet, and dark red look far too solid and heavy by artificial light. As a rule amalgamation of colours is dangerous, but a very beautiful effect can be obtained by mixing pink and mauve (very pale shades of each).

One word about the Sweet Pea—a flower so easy to arrange, so beautiful in our rooms and on our dinner tables. It looks lovely in large bowls, but for this it is necessary to have either one of the wire arrangements sold for the purpose, or failing that I have used twigs with

great success, putting them criss-cross fashion in the bowl as a support for the flowers, which would otherwise get into heavy masses. Then for foliage let me recommend that of the Everlasting Pea (*Lathyrus latifolius*), which is lighter than Sweet Pea foliage and not so precious (for who likes to sacrifice future blooms), and no other foliage is as suitable to Sweet Pea as its own, in fact to my mind no other is permissible.

To competitors for prizes in table decoration I should like to say a few don't's:—

Don't make your decoration too high, prizes have been many times lost by this fault.

Don't have the eternal Epergne in the centre of the table, try to be a little original. On the other hand, remember that *eccentricity* is not *originality*.

Don't put too many flowers in your vases, delicacy of arrangement is everything on a dinner table.

Don't place flowers about on the cloth to die for want of water—no true lover of flowers would be guilty of such an error.

Finally, strange as it may seem to say so, don't try to please the judges, arrange your table according to your own taste. The result is bound to be better if your own individuality be allowed fair play. "CHIC."

"Pocket Plums" or "Bladder Plums."

WE have received several specimens of the fungus disease called *Exoascus pruni*, which attacks members of the *Prunus* family, such as plums, damsons, and wild trees, as sloe, bullace and bird cherry. The mycelium of the fungus is perennial in the young branches of the tree through the winter: in spring, when the flowers expand, the fungus travels to young ovaries of the flowers, and the result is that instead of the normal plum we get an absolutely useless, dry fruit, deformed and varying in size, and often club-shaped. At first these structures are a yellowish colour, but about the end of July they are covered with a delicate whitish bloom. This bloom is really the fruits of the fungus which have burst through the plum skin to liberate the spores.

If a tree is badly attacked the best plan is to burn the tree, or where the tree is only slightly attacked the branches may be carefully pruned back beyond the point of infection and all prunings carefully burned.

Sprays with Bordeaux mixture at intervals from the time the leaves expand until the fruit is set, is a useful precaution to prevent this disease spreading. Blackthorn in a near hedge-row may also act as a host to the fungus, so should be cut out and burned in places where this fungus is troublesome.



Scene (Glasnevin tram arriving at cross-road).
Conductor to Enthusiastic Rock Gardener *en route* for Royal Botanic Gardens: "Eh, sir, are you for the Cemetery or the Gardens?"
Enthusiastic Rock Gardener: "Oh, the Gardens this time, the Cemetery later on."

New Zealand Flax.

ALTHOUGH *Phormium tenax* appears to have been introduced to our islands in 1798 it seems to have been not until the middle of the last century that it seriously claimed attention as a hardy plant, and from thence for a decade or two notices are frequently met with in the gardening Press of that period from far and near localities evincing satisfaction at its fast proving hardy character. The generic family name *Phormium*, bestowed on it by Thunberg,

met with. *Phormium Hookeri*, described as having dark green, flaccid leaves six feet long and nearly three inches wide, bearing spikes of yellowish-green flowers, was introduced in 1864, and flowered at Kew in 1894, but this appears to be a somewhat tender species.

SOME OTHERS.—*P. Cookianum* is a dwarf species interesting to those who care for variety, but we had great hopes of *P. tenax atropurpureum* a few years since, the possibility lying in its striking purplish-coppery hue, as seen in young plants, which has not been borne



THE POWERSCOURT NEW ZEALAND FLAX AND GUNNERA MANICATA

the Swedish botanist, derived from *phormos*, a basket, is suggestive of its economic use in the Maori menage.

SPECIES AND VARIETIES.—*Phormium tenax*, the typical plant, if one may thus term it, characterised by its more graceful semi-pendulous habit, in our experience flowers but occasionally. We have, in fact, had good specimen clumps flowerless over many years, until transplanting occurred, when they flowered the following season. *P. Colensoi*, the so-called Powerscourt form, in its stiff, upright growth, appears to flower annually, and these, apart from the variegated forms, are the two generally

out by its development, larger specimens taking on a washy tone as compared with its more youthful stage. Last, not least, of those we are acquainted with, apart from the variegated forms, comes the noblest of them all which we have not been able to identify, nor was it recognised by the late Mr. F. W. Burbidge. Whilst less pendulous than *tenax* it has in nowise the stiffness of *Colensoi*, but the magnificent leaves far exceed in length and width either species. We have met with but three specimens, by far the finest clump of which is in the old garden of the Loreto Convent, Bray, and this we understand has not been

known to flower. We have ventured previously to describe this under the provisional name of *nobilis*, and which we may add has thus far escaped criticism. By comparison with the well known *tenax* and *Colensoi* the latter, if we dare say so, are but poor things.

AS AN ORNAMENT.—As both *P. tenax* and *P. Colensoi* appear so amenable to a variable soil, and our climate generally, they are eminently suited to create a feature when planted *en masse*, each possessing a character peculiarly its own. We notice them growing in both dry and damp positions and in soil varying from stiff loam to spongy peat-bog mould, although to obtain the best effect in a limited time, for the particular purpose of forming handsome groups in the pleasure grounds or the wild garden, heavily manured loam will duly reward the planter. There are few more distinct or conspicuous features in planting than a bold group of *P. Colensoi* bristling with stately flower spikes and peculiar, warm-hued flowers. The remarkable fecundity of this species, owing to the high fertility of its seeds, is well known.

ECONOMIC USES.—Ever and anon the question crops up as to the feasibility of New Zealand flax cultivation as a factor in our industrial economy. Both in the raw and finished article Phormium fibre was one of a prominent trio of exhibits on the New Zealand stand at the 1907 International Exhibition held in Dublin, the others being magnificent examples of New Zealand's native timber, and the remarkable Kauri Gum both in its fresh and its fossilized state. The writer, being interested in these primary vegetable products of "God's own country," spent some hours, at intervals, during the run of the Exhibition among the exhibits, and by the courtesy of the officials in charge was enabled to get relevant information as to

the possibilities which lie in this antipodean flax as an Irish industry. This is mentioned as pertinent to the somewhat vague notions as to its value occasionally aired in the public Press.

WHAT IT IS.—First, as to the prepared fibre. The long strands—as manipulated by the Maories from selected leaves, under the patient and laborious method of maceration by stones under running water, in shallow streams—after many days produces an article of great tensile strength and silky texture, from which over long centuries they have woven a coarse cloth,

fishing lines and various goods suited to their modest requirements. Compared with the native prepared product, which, obviously, cannot come into the calculation of an Irish industry, the machine-wrought fibre is coarse and only suited for manufacturing into ropes, coarse cordage, and similar subjects, for which it is largely used in the antipodean colonies. This practically sums up the possibilities and capabilities of the Phormium as an Irish industry, and as to what field there is open for its development in this direction is another story. In conclusion, some have recognised its usefulness in the garden as tying material, and

even preferred it to bast. One merely scrapes down the leaf on either side to disintegrate the fibres, which are then readily stripped apart for use.

K., Dublin.



HAS anyone got the true Lord Anson Pea? The botanical name is *Lathyrus nervosus*, also known as *L. magellanicus*, a native of the Argentine. As figured and described in Sweet's British Flower Garden, it has most beautiful deep blue flowers, is a good *perennial* with triangular stems, glaucous smooth leaves, the shape of which are arrowheaded ovate, and it grows 3 feet high. Sometimes *Lathyrus tingitanus* parades as the Lord Anson Pea, but *L. sativus*, a blue-flowered annual, does duty under this name.—C. F. B.

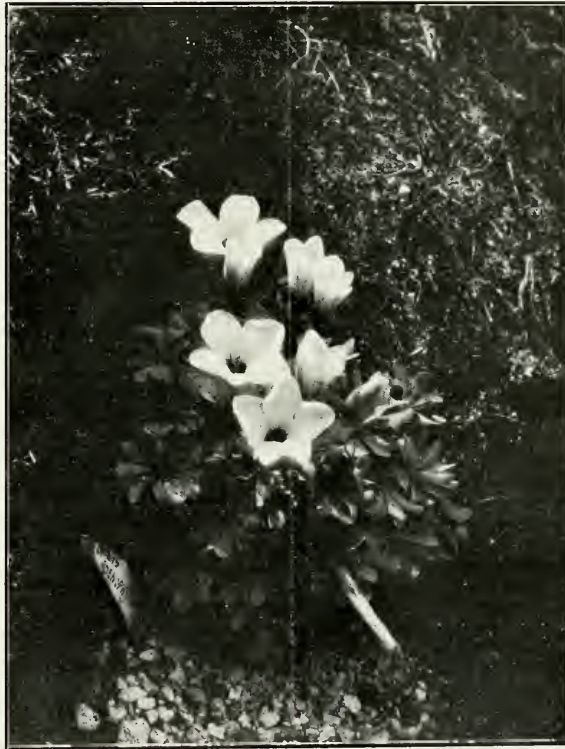


Photo by]

[M. Hornibrook

OXALIS ADENOPHYLLA (See page 109)

Growing at Abbeyleix

Hints to Amateurs.

By R. M. POLLOCK.

HARDY PRIMULAS.—A great many of these plants are only biennials, and have to be grown on from seed year after year to keep up a succession, but some of them are perennial and can be kept for years and increased by division. Among these are *Primula pulverulenta*, with crimson red flowers in whorls on powdered stems, which sometimes reach 3 feet in height; *P. japonica* and its white variety; *P. muscarioides*, so called from its likeness to the Muscari, the Grape Hyacinth, with the flowers of a purply blue, in heads with all the flowers facing downwards; *P. rosea*, beautiful bright pink, one of the earliest to flower in the spring. These are a few which can be grown by those who have a shady damp corner, and they are now out of flower, and can be divided and planted where wanted.

PINKS.—The garden Pinks, among which is the old favourite Mrs. Sinkins, and the border Carnations may now be propagated. It is a curious fact, but still a true one, that the best time to propagate these is when they are in full flower. Two methods are usually adopted to increase these—by layers and by cuttings. The former is usually applied to Carnations, because the stems in these are broader and therefore easier to handle. These layers should be made of fairly strong shoots, which are easily bent downwards. Place some old potting soil round the selected plant, and with a sharp knife cut a tongue about an inch long through a joint, and with a peg made either of wood or wire, peg the layer into the soil, and make all firm with a little more of the fine soil. The cuttings can be inserted in a shady border. The lower leaves should be removed and a clean straight cut made just below a joint, then with a dibble make a hole, insert the cutting to the bottom of the hole, and firm with soil. If the ground is dry it might be watered before proceeding to work, as it makes it easier to firm the cuttings. Carnation and Pinks in the border will benefit by a little topdressing, and where quality of bloom is desired more than quantity some of the buds on the Carnations may be removed. Amateurs are often doubtful as to the difference between Pinks and Carnations. These charming plants originated from two distinct species. Our garden Pink came from *Dianthus plumarius*, the "Feathered Pink," a European plant, which was supposed to have been introduced into England as far back as 1629. They are easily known by having much more slender stems and more grass-like foliage, and a Pink cutting will usually make a number of small shoots round the original cutting during its first year. The Carnation came to English gardens from *Dianthus caryophyllus*; the exact date of introduction seems uncertain, but it is probably a much older plant than *D. plumarius*. Border Carnations are easily recognisable by their broad foliage, stronger stems and broader flower buds.

Wallflowers, Foxgloves, Canterbury Bells and other biennials sown in May and early June will, towards the end of the month, be ready to prick out about 6 inches apart into nursery beds, prior to transplanting in autumn, when their permanent quarters are ready.

Aquilegias (Columbines) may be sown in the open ground where there is space, and pricked out when fit to handle.

Violas, Nasturtiums, and other free-flowering plants may be cut over, and so prolong the flowering period.

Delphiniums going out of flower should be cut down; this will induce a second growth, and these blue flowers, coming late in the autumn, will be very acceptable among the wealth of orange and yellow which usually prevails during that season.

Any autumn-flowering *Chrysanthemums* not already planted out should be attended to at once. Weak liquid manure is an excellent fertiliser for all plants coming into flower, and is quite the safest form of manure for small gardens.

BULBS.—Where the foliage has turned yellow and comes away freely in the hand when pulled it is a sign that the bulbs are fit to lift, and this should be done with a fork and not a spade, as the latter, if it comes in contact with the bulb, will slice it. Choose a dry day to commence work, shake away as much of the soil as possible when lifting, but leave the general cleaning of the bulbs until later on when the weather is too wet for outdoor work. Store these lifted bulbs in a dry shed or loft, and as far as possible keep the different sorts distinct. In ordinary garden borders it is quite unnecessary to lift the bulbs each year, but some of the *Narcissi* increase so rapidly that, to ensure a good flower display, they must be separated now and then—that is to say, every three years or so. Where the foliage of the Daffodils in grass has died down and turned yellow the grass may be cut, and so restore again the tidy appearance. The fact that the grass must be left uncut where Daffodils are planted is the one great drawback to growing bulbs in a lawn.

Keep the hoe going, it will save a great deal of weeding later, especially if the weather is dry and hot, when the weeds die away as soon as uprooted.

Keep Sweet Peas picked over and give plentiful supplies of water and liquid manure alternately.

All rubbish should be saved and put in a heap in some out-of-the-way corner. This should be turned occasionally, and it will in time decay and can then be dug into the garden. If this is not possible, there being no corner which can be given over to it, a small trench can be opened along the wall, in which the rubbish can be buried. No stones or gravel should ever be put on a rubbish heap.

Any spare annuals over from the bedding may be used in filling gaps in the borders. Stakes will want looking after, as rain and wind will strain these and the tyings, and we are sure to have both rain and wind before the summer is out.

If time allows, hedges may be cut towards the end of the month. It will be found much easier and less severe on arms and muscles to cut them now or next month, while the wood is soft, than later in the year, when it has become hard.

GREENHOUSE.—*Cinerarias* and *Primulas* raised from seed may, if ready, be pricked off. Roses that have gone out of flower may be removed from the house and stood in the open in a sheltered place. Put a slate under the pots to prevent worms, &c., entering the soil. Attend carefully to watering of any plants in the house. A plant that has once flagged from want of water receives such a check that it seldom ever really recovers. If this should occur, place the pot in a bucket of water, letting the water more than cover the pot, and leave it there until all the bubbles have ceased rising from the soil. The length of time this will take naturally varies according to the

size of the pot, but it will do an 8-inch pot no harm to stand 15 to 20 minutes in water if it has been allowed to get really dry.

Fruit trees on walls carrying heavy crops will benefit by a few good drenchings of liquid manure. Summer pruning of fruit trees, with the exception of small bush fruit, may be done during the month. On wall fruit stop (take the top off) all shoots not required for filling in and forming the tree. Tie those required as nearly in their places as possible. It is easier to bend them while they are young and soft than to wait until they get firm. For bush fruit—apples, pears, plums, &c.—merely take the lead out of the shoots; this will encourage the lower eyes to the shoot to fill and avoid bare branches in the tree. Extract of Quassia used as directed on the tins is the simplest means of keeping fly off fruit trees. It renders the leaves distasteful to insects. The Quassia Chips can be bought and boiled in a gallon of water, then add another 9 gallons of water, and use this with a sprayer. But why make it on the premises as good can be bought ready for use?

Delphiniums.

By J. W. BESANT.

THE perennial Larkspurs are among the noblest flowers of summer, and wherever hardy flowers are grown they are now considered indispensable. So much improvement has been made on the older varieties, both in colour, form and also in time of flowering, that we may enjoy glorious masses of colour from early June till August and even later if due attention be paid to cutting down the earliest spikes before seeds have formed. Good cultivation, however, is absolutely essential if the best results are to be had over the longest possible period. Delphiniums are gross feeders and abhor a dry, poor soil. Rich, moist soil is a necessity if long strong spikes of large, well-formed flowers are to be obtained, and where the natural soil is poor trenching and heavy manuring with well-rotted manure is essential. This condition of the soil must be maintained by renewed applications of manure every autumn or spring as the circumstances necessitate. In light or medium warm soils autumn planting is successful as the new roots which are then forming, not only in the case of Delphiniums, but in a large percentage of hardy herbaceous plants, can grow uninterruptedly until cold frosty weather sets in and are then in the best possible condition to begin operations in spring, immediately the sun begins to warm the soil again. On the other hand, plants which have been left undisturbed in autumn form new roots, just the same, and when lifted for replanting in spring obviously must lose many of the autumn-formed roots—damage which must be repaired before the plants can begin to grow freely. If, however, the soil be heavy and retentive of water it quickly becomes cold towards winter, and young or newly-divided plants suffer considerably planted in such a medium, since the young roots are unable to make much headway in it and decay, not infrequently results creating disappointment in spring. In the case of heavy cold soil, therefore, spring planting may be preferred. An endeavour should be made, however, to render tenacious soils freer and warmer by trenching, and thus aerating, and by the application of lime as the work proceeds.

The most popular position allocated to Delphiniums is the herbaceous border. With varieties ranging in height from 2½ feet to 6 or 7 feet magnificent displays are possible. The possibilities of Delphiniums for beds are just beginning to receive attention. Some of the new kinds, with branching spikes, continue pushing up fresh shoots over a long period, especially if kept supplied with water in dry weather and liquid manure in the case of established plants: examples of this kind are found in Belladonna, Persimmon and others of that set.

How long a clump of Delphinium may remain undisturbed must be determined by the grower, who knows the capabilities of his soil, and can note the behaviour of his plants. Some growers advocate lifting and dividing every three years or so, but it is certain that in a good soil they will remain vigorous twice as long if care be taken to thin out the weaker shoots in spring. This is a most important point, and the thinning should be done in no half-hearted way. Half a dozen tall strong spikes, with finely developed flowers, are infinitely more effective than a score of weak ones.

Delphiniums are easily propagated by seeds and by division. Seeds, if sown in autumn or in spring in gentle heat, will give flowers the following autumn if generously treated. When large enough to handle comfortably in spring the seedlings should be pricked off in boxes and kept close in a cold frame until large enough to plant out after being well hardened off. They should be planted in beds of light rich soil and kept well watered in dry weather, and will soon make good plants. Division should be done in spring, before the shoots have made much growth. A few plants of the desired varieties may be lifted and shaken quite free of soil, when the young buds or "eyes" can be easily seen. A strong, sharp knife, carefully inserted between the prominent buds, will sever them readily with a tuft of roots attached. The roots, if necessary, may be shortened to allow of the "eyes" being potted up, when they may be put in a frame and treated as the seedlings. If only a few extra plants are required the clumps may be divided into two or three pieces and replanted in the open ground.

The difficulty in recommending varieties is in knowing what to leave out. Their number is legion and tastes differ. A few good ones are mentioned below.

Arago, double blue and violet; King of Delphiniums, gentian blue, white centre; Félicité, pale blue, with black centre—these are tall growers.

Varieties of medium height are Lamartine, violet blue; Moerheimi, white; Persimmon, sky blue, white eye; Mrs. Thompson, pale blue, with brown centre.

Dwarfer sorts are Belladonna, Cambridge blue; Mrs. J. S. Brunton, sky blue; and grandiflorum, a species which, with its white variety, should be occasionally raised from seeds, as in heavy soil they are apt to die out in winter.



IRIS VARIEGATA VAR. "IRIS KING."

AMONG the rhizomatous-bearded Irises this is a remarkably fine variety. The flowers are large and of good form, the "standards" old gold coloured and the "falls" deep velvety maroon. It is quite one of the best Irises for a border to flower towards the end of June.—B.

Surface Cultivation of the Soil.

By ANDREW F. PEARSON, F.R.H.S. Lota Lodge,
Glannire, Co. Cork.

JULY is the hottest month of the year in the British Islands: the great radiation of heat from the earth's surface makes it extremely trying to vegetation and renders incessant surface cultivation imperative if high-class produce is desired in the garden or field.

After such continuous wet weather as we have recently experienced a hot prolonged drought will have a more serious effect on vegetation than it would have had if the past few weeks remained normal in point of rainfall.

In gardens, therefore, the Dutch hoe cannot be plied too often: it is an indispensable tool at all times, serving the primary purpose of destroying weeds; it renders the soil more friable and uniform in texture, checks excessive evaporation, makes the soil's surface readily receptive of rain, and so creates an even luxuriant growth in all vegetation.

In very hot weather, with scorching sun and parching winds, one hour's thorough hoeing will do as much good as ten hours watering over the same area: the moisture held in the lower levels of the earth which, by reason of capillary attraction, is always moving upwards to the surface, whence it is drawn into the atmosphere by the process of evaporation, is arrested by the stirring of the surface, the thirsty roots readily assimilate the moisture into their system, and the result is seen in the robust appearance of their owners. Even when lawns and meadows have turned brown by force of drought, well filled soil remains in possession of healthy green growth.

If deep cultivation has been practised in the past he who cultivates his surface soil vigorously during the dry summer months may rest assured his crops are secure, provided the ordinary attention has been given to manuring, and no ardent cultivator of the soil ever neglects that where it is possible to secure a supply.

An excellent tool for stirring the surface to a greater depth than the hoe is the Buco Cultivator: a five-tined, light, handy tool, easily adjusted to different widths and eminently suited to work between potatoes, turnips, cabbages, &c., it is much quicker than the hoe, much liked by workmen, and even after rain can be run through a plot of ground where the hoe would clog and retard progress.

The Planet Junior hoe is an American invention, and is supplied in sizes suitable for a man to a horse: it has attachments which may be used for raking and hoeing simultaneously, making furrows, or deeply cultivating: like the Buco, it is certainly a handy tool, as one can override a line of turnips, beetroots, or even medium-sized cabbages, and hoe two lines at a time without injuring the plants, and on fine soil the work is rapidly carried out. It is not, however, so easily worked on tenacious soil, and although anovel way of cultivating I feel inclined to question its efficiency.

Besides the foregoing benefits derived from surface cultivation many insect pests are frustrated in their work: the eggs of the various beetles responsible for the production of the wireworm are laid bare to the searching eyes of the birds; various weevils, as well as slugs, and the eggs of kindred predators, are bothered by the hoe. Indeed all that I can say in favour of surface working of the soil is not enough: its value, in my opinion, is inestimable, and only comes second to deep winter cultivation.

Some people rely on watering in dry weather;

my experience has taught me to rely on surface cultivation instead: unless one can water regularly and thoroughly: do not water at all. It is well known that water drawn directly from a well or pipe system lacks the fertilizing properties of rain or water exposed in an open tank to the atmosphere, and in dry weather, when water is needed, the hot dry air draws off a great deal to the detriment of the plants to which it is applied, leaving the surface crusty and baked: and if big spaces must be watered the time taken is considerable and generally at an hour when the sun is at his strongest. Night is the best time to apply water, but that is not practicable on a big scale. Therefore I say put off watering until the very last, and if it must be done do it thoroughly, but, come what weather may, cultivate deeply in winter, and keep your surface incessantly on the move in summer, and, with mulchings of strawy manure round favourite flowering plants, vegetables or fruit trees, the whole-hearted cultivator will assuredly reap success in the hottest and driest of summers.

Such cultivation of outdoor crops is the sheet anchor of the horticulturist.

Glasnevin Notes.

DURING a recent visit to the Botanic Gardens, Glasnevin, I saw many good things amongst the rock stuff. I fancied *Pentstemon puniceus*: at first glance the glaucous foliage looks like a *Sedum*, but the flowers are tubular and scarlet. *Aubrieta* Mrs. Lloyd Edwards is a fine colour. *Scutellaria indica japonica* grows only 1 to 6 inches high, and in most winters it is hardy. Paul's Pink *Aubrieta* is good: while *Dianthus cal-alpinus*, a hybrid between *callizonus* and *alpinus*, is a little beauty covered with flowers of a deep warm rose. I much liked the shape of *Umbilicus oppositifolia*, a quaint little plant with *Sedum*-like leaves and drooping yellow flowers. *Kniphofia natalensis* is a small poker plant. The rock garden looks well. I never saw such magnificent blooms as are on the *Ramondias*. I much admired *Ramondia pyrenaica* rosea. I had not previously seen it, and it is certainly very striking: the white variety was also very beautiful. The pink-flowered *Oxalis adenophylla* is very good indeed, and seems well at home. *Draba pyrenaica* I liked, also *Veronica Whittallii* with beautiful blue flowers, and the grand patch of *Viola gracilis* × *Munbyana* is worth seeing. *Veronica pyrolaeformis*, from China, is well named, a small grower about 6 inches, with porcelain blue flowers mimicing those of the *Pyrola*. *Dracocephalum bullatum*, a new Chinese species, with large heads of blue flowers, was good, as also was a fine lot of *Aubrieta* Peter Barr. The *Dracocephalum*, *Veronica* and *Roscoea cautioides*, with pale yellow flowers, are desirable introductions of the "Bees, Ltd." *Salvia Souliei*, a somewhat recently introduced Chinese plant, is a good colour, and *Ajuga reptans*, pink variety, is a pretty little plant. *Veronica teuricium dubia rosea* is good, and the white form is also pretty. Some fine *Cypripediums* were flowering in the rock garden, a dwarf species with curious purple slipper-like flowers was labelled *C. tibeticum*, and there was a tall yellow one named *C. hirsutum*, with *C. spectabile* in another part throwing up strong stems. In the bog bed *Primula Unique* is a lovely colour: the lises are also fine, *Iris sibirica pallida* being an especially nice colour, and *Iris setosa*. I was in the houses—just a hurried run through—they look A1. The blue Water Lily in the big tank is a grand colour, also the *Cannas*.—"S."

Some Bulgarian Novelties.

WHEN crossing the Schipka Pass in 1911, with the O'Mahony of Kerry, we came across a rather nice broom called *Genista spathulata*. Unfortunately, of the plants we collected, only one survived the homeward journey, and this one, transplanted to Glasnevin, has just been covered with a mass of bright yellow flowers. At present the shrub is small and less than a foot high, with a branched and spreading habit. The stems are angular, bearing lance-shaped leaves, and when fully open the keel of the flower is in a vertical line with the standard.

Ranunculus illyricus is very distinct: during the early part of the year the narrowly trilobed leaves are quite silvery and attractive. In June glistening pale yellow buttercup flowers are borne on stems a foot high. This Bulgarian Buttercup grows well in the ordinary border or in peaty soil. Near by is a form of *Orchis latifolia*, with large flowers and very broad leaves heavily spotted with dark brown.

Ajuga laxmanni, found growing among stones, is more quaint than pretty, the plant grows a foot high with soft hairy leaves placed in pairs at right angles to each other; the flowers are not showy, but one lipped white and striped with purple.

Sempervivum Pittoni is quite one of the nicest of the Housleek family, forming dense rosettes, 1½ inches across, of incurving hairy leaves, and seems a favourite with visitors.

The wild *Iris variegata* of Bulgaria, is a smaller plant in leaf and flower than the cultivated varieties: the standards of the flower are yellow, and the falls heavily veined with purple. This species flowers at the end of June, while *Iris melitta*, a dwarf only 6 inches high, produces its smoky brown flowers in early spring.

Dianthus Grisebachii has grassy leaves, and in June and July throws up flower stems a foot high, bearing clusters of flowers of a bright magenta, spotted with small white dots, each flower about three-quarters of an inch across.

In July *Dianthus noëanus*, with spiny foliage, follows, having white fringed flowers of no special merit.

Campanula orbelica flowers in early June, a tiny plant only 3 to 6 inches in height, with blue hanging bells. It has a large fleshy rootstock, and is closely related to the true *C. alpina*.

At the end of June *Campanula moesiaca* flowers, it reminds one of the habit *C. glomerata*, growing 18 inches to 2 feet high, and bears clusters of flowers from the base to the summit. The flowers are stalkless, erect, about an inch long, of a beautiful pale blue, but unfortunately it is only a biennial.—C. F. B.

Oxalis adenophylla.

OXALIS ADENOPHYLLA is a recent and very welcome addition to our rock gardens. Its introduction, I believe, we owe to Mr. Elwes, and it comes from Chili. It is a gem of the first water, not a rival but a companion to the better known *O. enneaphylla*. The charms of each are so pronounced and distinct that they are only enhanced by comparison. The foliage of both is similar, but, whereas the flowers of *O. enneaphylla* are pure white, those of *O. adenophylla* are rich pink with a brilliant crimson centre from which spring veins—at first distinctly marked and eventually almost disappearing as the top of the petal is reached. The contrast between the flowers and the foliage is charming, and the tone of the pinks far purer than any of the pink

forms of *O. enneaphylla* rosca I have seen. Unfortunately the plant is very scarce, and seems likely to remain so, as it is difficult to propagate. It does not form "scales" like *O. enneaphylla*, but makes a smooth onion-shaped bulb, and although Glasnevin has managed to divide its plant it is not an undertaking one would recommend to the unskilled. One must be thankful that when one has got it that it is not difficult to grow. The plant in the accompanying photograph (see p. 105) is growing in a peat crevice in half shade, planted in a mixture of peat, leaf-mould, sand, loam and gravel, and so far seems as cheerful and willing as *O. enneaphylla*.

MURRAY HORNIBROOK.

Garden Hybrids in Co. Dublin.

AT the end of June an interesting hybrid *Geum* was flowering in Mr. Lloyd Praeger's garden at Rathgar. *Geum rivale* (the Water Avens) seems to have been crossed by a yellow-flowered Avens, possibly *G. rheticum*, and the result is an almost intermediate plant, with flower stems about 18 inches high, bearing wide open flowers of a curious buff-yellow.

At Glasnevin *Meconopsis sinuata latifolia*, a blue-flowered biennial Poppy, with branching flower stems, was crossed with *Meconopsis grandis*, a perennial species with beautiful large blue flowers, about 3 to 4 inches across, borne on solitary stems about 2 feet high. The hybrid has leaves similar in shape to *M. grandis*, but rather more deeply toothed: the flowers are not so large or so beautiful, although the hybrid has the advantage in that several flowers open at the same time. It remains to be seen whether the hybrid will prove a good perennial.

A HYBRID SNAPDRAGON.

I ENCLOSE a flower of an interesting hybrid Snapdragon which has been kind enough to sow itself in my garden. I have a plant, 9 or 10 years old, of *Antirrhinum glutinosum* growing on the top of a very dry granite wall, and at some little distance on the same wall some dwarf plants of the ordinary garden Snapdragon of mixed colours have been growing for a number of years: for the last 2 or 3 years there have appeared out of the top of my *glutinosum* plant one or two spikes of the flower I enclose. I thought that one of the ordinary Snapdragons had sown itself there, and did not trouble to examine it carefully. Recently Mr. Praeger noticed it, and at once declared it was a hybrid, so we climbed up and examined it, and surely enough it was. It has the habit and foliage of *glutinosum*, but the flowers are a pinky mauve with a lemon throat. The plant is evidently quite old, but has only recently struggled through the foliage of its parent. I have cut the latter away, and hope that in time it may produce some wood suitable for cuttings. It would be impossible to move it. It would be most interesting to know if any of your other readers have had a similar experience. I have 3 or 4 other very fine 10-year old plants of *A. glutinosum* on my rockery, but have never had a natural seedling before, though I know of a garden at Raheny where it seeds freely.—"Rocks," Dublin.

[*Antirrhinum glutinosum*, a native of Spain, is not quite hardy in every garden, so probably the Snapdragon will impart hardiness; in any case it has given a bright colour to its offspring. The hybrid is well worth taking care of, for it promises to be a brighter and more effective plant than a *glutinosum*.—ED.]

Reviews.

Vegetable Culture for Amateurs.*

THIS small book is the outcome of thirty years' experience in the cultivation of vegetables, and is written especially to help the amateur. All the really useful kinds of vegetables are described in alphabetical order, the cultural details are described with lists of the best varieties to grow for home use and some suitable for exhibition. The manures most suitable to each crop are given, with pests that are injurious and methods of exterminating them.

The advice given is practical and sound, while at the end of the book may be found a useful calendar of work for the twelve months.

Propagation and Pruning.†

THE author has had a long experience in teaching horticulture, and conveys his information to readers so that it is easily understood.

The book is not confined to propagation and pruning, but includes chapters upon other related subjects. The work opens with Plant Physiology, giving the reader an idea of the internal structure of a plant. Propagation is next dealt with in its various forms, such as seeds, cuttings, leaves, layering, budding and grafting. July and August are the months recommended for budding, when the bark lifts freely from the wood. It is said "amateurs often fail in the successful budding of roses through not keeping the newly inserted buds shaded for a few days after the operation," but it is probable that novices fail more frequently because they do not realise the necessity for taking the bud with a base.

Chapters are given upon transplanting and manuring, followed by the propagation of the various kinds of fruit trees, flowering shrubs, trees and conifers.

The last chapter treats of the propagation of Stove and Greenhouse plants, but in the spelling of the botanical names errors are too frequent. When dealing with the Cherry, *Cerasus Nakabeb* is said to be the stock for dwarf trees, but, we presume, that *Cerasus Mahaleb*, the St. Lucie Cherry, is meant.

Illustrations are given at the end of the book, and the type is large and clear

a compilation, he realises there is need for a science of prophylaxy as applied to plants. In his introductory chapter he endeavours to formulate the principles of such a science, but his treatment is too sketchy to be satisfactory.

The bulk of the work consists of a series of chapters dealing in turn with the various chemical substances that find their way into the gardener's armoury. After a description of the sources, preparation, and properties of each of these, its use is discussed; and an attempt is made to explain its action on chemical and physiological grounds. We then get practical details of methods of application—often accompanied by useful cautions. Finally we are given an orderly discussion of those diseases and pests against which the particular substance has been found effective. Throughout, the author makes frequent reference to experimental work that has been done in gardens, vineyards, fields and orchards. His historical allusions lend additional interest to much of his writing. The book concludes with a glossary and an index, both admirably designed to facilitate reference to plants, diseases, or chemicals.

This brief summary of contents conveys but a poor impression of the wealth of detail with which the four hundred and fifty closely printed pages abound. Generally it may be said that the work is one that should find a place in every horticultural reference library. When a second edition is demanded, however, one or two slight improvements might well be made. The translator could well, in many places, give a smoother rendering of the French. Again, the few illustrations are in execution unworthy of the text. Indeed it is high time that a new block was issued of the figure of the *Eclair* sprayer.

As the sub-title of the work indicates that it is intended for the use of manufacturing chemists as well as of agriculturists, &c., some notice might have been taken of Pickering's work on the composition of the various precipitates formed on the addition of lime to copper sulphate. Surely, too, the translator exaggerates when, in a footnote, he states that "the agricultural quality of blue vitriol contains up to 50 per cent. or more of green vitriol." The reaction taking place on adding a solution of carbonate of soda to one of a copper salt is not so simple as the equation on p. 277 would indicate: hence any calculation of quantities based thereon is misleading.



Insecticides, Fungicides, and Weed-killers.‡

THE author aims at providing a work of reference that shall be useful to all who wish to protect plants against disease. His book is the result of much labour, and is marked by that orderly treatment which generally characterizes French scientific works. Dr. Bourcart has made an earnest effort, too, to put his subject on a logical basis; and, though much of his work is necessarily

Iris chrysographes.

THIS new Iris was flowering at Glasnevin during the end of June. A Chinese species, found by E. H. Wilson in 1908, it is one which should become popular on account of the deep rich velvety purple colour of its flowers, set off by flanking gold lines, which suggested the name of the species, although in some specimens the gold lines are less marked than in others, while the standards of the flowers are long and narrow, pointing outwards at an angle of about 15°. The flower stems are about 2 feet high, rising above narrow leaves, which curve gracefully outwards.

Iris chrysographes belongs to the *sibirica* group, and grows freely in any good ordinary soil, but, like the Siberian Iris, appreciates moisture.

* "Vegetable Culture." By Trevor Monmouth. New Third Edition. Illustrated. Paper, 1s. net. Published by Upcott Gill.

† "Propagation and Pruning." By J. C. Newsham, F.L.S. Published by Crosby, Lockwood & Son, 7 Stationers' Hall Court, Ludgate Hill, London. Price, 6s. net.

‡ Insecticides, Fungicides, and Weedkillers." By E. Bourcart, D.Sc. Translated from the French by Donald Grant. Published by Scott, Greenwood & Son, 8 Broadway, Ludgate, E.C. Price, 12s. 6d. net.

The Flower Garden.

By J. H. CUMMING, Royal Dublin Society, Ballsbridge.



GENERAL REMARKS.—The latter half of June being dry and hot has told somewhat adversely on bedding. Where flowers appear prematurely to the sacrifice of the plants' growth, remove a portion and they will repay the assistance later on. Rhododendrons and Azaleas will be getting past their flowering season, and where choice varieties exist, it is most helpful to cut off all seed pods that remain. New growths immediately thereafter starts away. Where time will allow a good soaking of water will help all plants that have been shifted recently. Let it be thorough, a mere dribbling on the surface is worse than none. Water in the evening and loosen the surface of the soil in the morning. Keep the rake in the toolhouse these times. Dahlias will require good stakes now. Place three round each plant and draw the growth gently to form a shapely plant. Where dwarf Dahlias are grown, secure them to the ground with forked pegs, otherwise the wind will work havoc. Where hedges are irregular in their growth, do not clip at this season, but trim with the knife any gross growth that is spoiling the neatness of the rest. This applies to Cupressus, Privet or

Yew. The usual formal clipping should be delayed till September or early in spring. Sow *Humea elegans* without further delay for next year's plants. It takes a fair share of cultural skill to grow this subject, but it is well worth the trouble. Sow in pots and cover with a piece of glass. Place the pots in a cold frame, shade, and when the seedlings are up prick off into pans or boxes, and pot singly when large enough. Careful watering and a cool place, free from frost, all winter are important elements in their culture.

VIOLAS.—To prolong the vigour and floriferousness of the plants, constant picking off old blooms and seed pods should be attended to. Seed may also be sown in a cold frame this month and the seedlings left in frame until the following spring, when, if planted out in April, will flower in June and July. When choosing a position for them, select one with some shade part of the day, and the soil should be rich and not given to dry too quickly. A handful of fine soil placed in the heart of each clump will soon induce plenty of cuttings if it is desired to perpetuate some particular variety.

SWEET PEAS.—Where grown in special trenches no doubt the matter of supplying a stimulant will also receive attention. To those who sow Sweet Peas in the ordinary way and expect a prolonged period of flowering, I should like to impress on them the necessity of picking off all seed pods as they appear. Also, if the weather is dry, give two thorough soakings per week of liquid manure, alternating this with soot water. Never have the manure water strong. The colour of light ale is a good guide. A liberal coat of old manure on either side of the rows will also be of much value.

SPRING BEDDING.—Now that the summer "stuff" is well on its way in fulfilling its mission, the gardener will be thinking of his stock to take the place in late autumn of the all too brief summer display. Whenever the seedling Wallflower is large enough to handle have it lined out 8 inches between the plants and a foot between the lines. This will enable the plants to grow dwarf and sturdy and make excellent material for filling beds in October. A few cold frames in a shady situation and filled with old potting soil, sand and leaf-mould will be invaluable now to insert cuttings of Arabis, *Alyssum saxatile*, *Aubrietia*, *Cheiranthus*, *Violas* and such things that prove useful for spring flowering. At Pennick's Nurseries, Delgany, thousands of cuttings are struck under cloches, as used in French gardening. These are shaded by being washed over with whitening or lime. Keep these and the frames close till growth commences. The stock of old Primroses or *Aubrietia* that it is desirable to increase may be divided up and replanted in a shady corner. Use plenty of leaf-soil and give copious waterings till the plants are well established.

MULCHING.—We can scarcely yet determine the character of the summer, but, independent of its being a wet or dry one, all bedding plants and flower borders are greatly benefited by a mulching of some light material. Sifted leaf soil is excellent if free of the seed of weeds. Spent mushroom bed manure and fine peat moss litter answer the purpose very well. This not only helps to improve the appearance of the beds, but keeps the surface cool and so prevents too quick evaporation when the sun is likely to be trying on young plants.

The Fruit Garden.

By D. MCINTOSH, Gardener to Alderman Bewley, Danum, Rathgar.

STRAWBERRIES.—If it is the intention of the cultivator to lay out a new bed of young strawberry plants, now is the time to select good runners for that purpose. One year old plants will supply the best and strongest runners. Three-inch pots should be got ready, thoroughly washed, perfectly dried and set in position, one pot at each selected runner. Soil that has done justice to Chrysanthemums, or that of an old melon bed, will make an ideal compost, provided the whole be passed through a half-inch sieve and used in a moderately dry condition. Next, take a bucketful of the prepared soil and start away by taking the runner in the one hand, bend it to the bottom of the pot, and fill in and firm the soil with the other hand, so that when the work is completed each crown will be situated in the centre of the pot. This is the best and most expeditious system of layering these runners successfully. The old style of plunging the pots is not necessary, if due attention be given the watering for three or four weeks, when they should be sufficiently rooted for removal. Stand the pots in a somewhat shady position for a few days and plant out in rows $2\frac{1}{2}$ feet apart and 2 feet from plant to plant, in ground that has been well worked and heavily manured. Should the weather be hot and dry after planting give the necessary supply of water until they become thoroughly established. The plants will make rapid progress, and a good crop should be secured the following season.

MELONS.—Seeds which were sown about the middle of May will have produced plants that are now setting their fruits. Admit air early in the day and pollinate the flowers when the atmosphere is fairly dry. The chief aim should be to fertilise as many flowers as possible on one plant at one time. The more flowers fertilised at one time, the more chance these fruits will have to swell away evenly. Others that are set later usually turn yellow and drop off. When the crop has been set, continue the syringing of the plants, morning and afternoon, damping down paths and all bare spaces several times during the day. Maintain a night temperature of 70° and a day temperature of 80°, rising to 90° with sun heat. Melons require abundance of water and frequent syringings when growing freely. It should be carefully seen that the water used for both purposes is warmed to the temperature of the house. Pinch all laterals at the first leaf beyond the fruit. Owing to overheated pipes or too dry an atmosphere, red spider is commonly the most injurious insect to deal with. Examine the leaves separately at frequent intervals, and if any insects are detected sponge off very carefully. The leaves are very brittle, therefore be cautious that the sponge and forcible syringing does not injure the foliage.

VINERIES.—Mid-season vines will now have commenced to ripen their fruits. At this stage the last dose of liquid manure should be given. Continue the stopping of growth until the grapes are ripe, at which time all the side growths should be permitted to make two or three leaves before being again stopped. Maintain a warm, airy atmosphere throughout the day, but close up the house as usual in the afternoons until the time arrives that the grapes have well finished their colouring. A check of air by means of the top ventilator should, however, be put on about six o'clock and kept on all night. In houses that contain Madresfield Court grapes, particular attention must be given at all times that a damp, stagnant atmosphere be avoided. Where grapes are grown in greenhouses, it is wise to have the bunches well thinned, because they will keep much better when ripe where moisture is continuous through the constant watering of plants. If the roots are growing in the outside border, keep a look out with regard to drought. A great amount of water is taken up by the vines during long days of bright sunshine, much of which is evaporated by the leaves. When allowed to suffer in this respect, an attack of red spider will soon make its appearance, and will be found most difficult to eradicate.

The Vegetable Garden.

By J. G. TONER, County Instructor in Horticulture, Co. Monaghan.

CABBAGES.—A very important detail of the month's work is the sowing of cabbage seeds to produce an early spring crop. Usually a piece of potato ground is chosen for this purpose. In any case the preparation must be good, so that the young plants may be fit for their final quarters during September. Late planting, needless to say, does not make for an early crop. About the second last week of the month would generally prove a good time to sow.

TURNIPS.—Is it not paradoxical that many of

the white turnips are quite yellow? The latter are decided favourites for winter and spring use. They are uncommonly hardy too. The lover of juicy mutton and boiled turnips who has not tasted the fine flavour of the Jersey Navet and Orange Jelly varieties has a treat in store. Along with rich ground very early thinning is the main factor in ensuring tender turnips. Every gardener does not seem to recognise this. Amongst the whites it would be very difficult indeed to select a better variety, taken all round, than Snowball.

PARSLEY.—The mention of mutton boiled naturally brings parsley to mind, it being a component of the proper sauce, at least it used to be. Sow seeds now in a dry and sheltered position for winter use. If a glass-covered frame can be spared for protective purposes later on, a special bed of the proper size might be sown also. Later the frame can be placed over it.

BROCCOLI.—These must be planted out as ground becomes available, so that winter and spring may not find the pot or table dish empty. Quite reliable varieties are offered to come in during the different dark months. Rather firm ground, not over rich, is the thing, and if a space of two feet be allowed between the plants they will do themselves justice.

POTATO ONIONS.—These are favourable with many owing to their immunity from attacks of the onion fly. Immediately the leaves have withered they ought to be lifted and thoroughly dried in the sun. They will not keep well unless the ripening process is well attended to. When left in the soil after maturation a second set of roots is often made and a new growth begun. It is not good for them nor for the grower. Be wise and prompt.

SPINACH.—If the spinach beet is not looked upon with favour, the prickly spinach ought to be sown now. In stiff heavy soils there will not be full success unless raised drills are made. More spinach plants die off during winter from excessive moisture than the frost ever kills. This remark is particularly true of recent years. The drills may be a foot and a half apart, and eventually the plants are thinned to half that distance. Hence large leaves are developed as plenty of room is given.

BRUSSELS SPROUTS.—These may, of course, be planted still. For many a long month they supply one of the most tasty green dishes. As they grow fairly tall, moulding up must be done. Otherwise the wind will turn them over wholesale, and as many roots are broken much harm is done.

LETTUCE.—Seeds may be sown now in quantity to produce a winter crop. It will be allowable to transplant the youngsters. This, however, does not pay in summer—that is, if summer weather prevails. All-The-Year-Round variety is as good as any, but the Cos varieties stand rather more hardship. These, it should be noted, require to be tied for the purpose of blanching.

OUTDOOR TOMATOES.—Rigorous treatment will be necessary in the training and disbudding of these. The term disbudding is used advisedly. For it is quite a silly proceeding to allow large side shoots to grow, and in numbers too, and then when the spirit moves the tomato grower, he, armed with knife or other weapon, proceeds to remove them wholesale. That is just waste, double waste. Rather should the tiny side shoots be taken away when they can be handled by using the finger and thumb.

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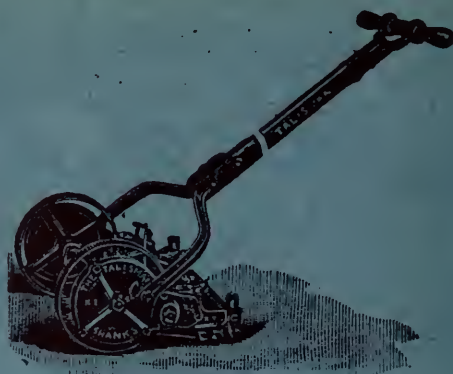
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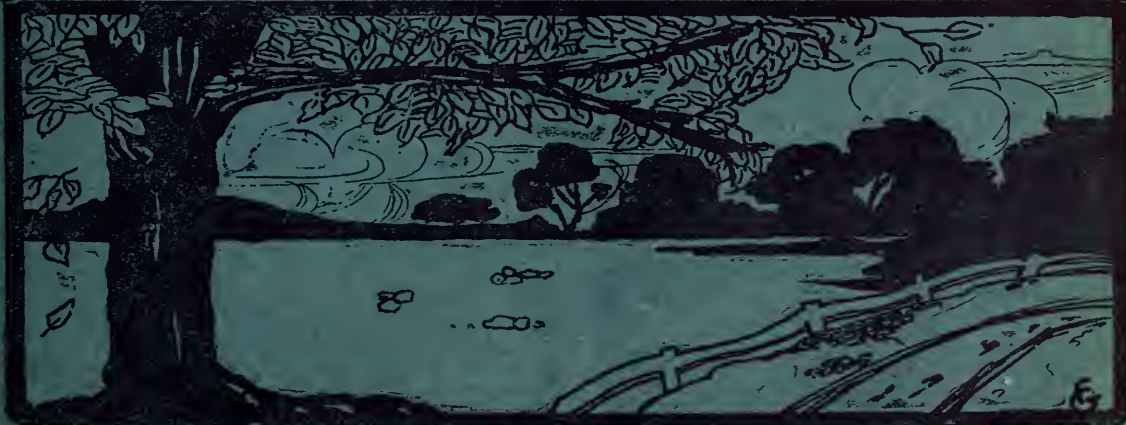
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TWOPENCE

Irish Gardening

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EDITED BY C. F. BALL.

Chinese Plants at Aldenham.

By THE HON. VICARY GIBBS.

(Continued from page 99.)

WE have several plants of a *Piptanthus*, which, as far as I can judge, is identical with the well-known *Piptanthus nepalensis*, or false Laburnum. The seeds, however, were collected at a great altitude, with the result that instead of requiring the protection of a wall, the newcomer has passed unscathed as a bush through the last two winters in low, open ground near water.

Populus lasiocarpa gives every promise of making a highly ornamental tree. Though my specimen is at present only about 8 feet high, its enormous leaves, with red midrib and petiole, produce a fine effect. It is a strong grower, and is said to like a damp situation; unlike other poplars, it is very difficult to propagate from cuttings.

We have growing here two new *Potentillas*, at present unnamed—one with white and the other buttercup-yellow flowers; they are not very distinct from those already in cultivation, but are, I think, superior in size and brilliance of bloom. They flower very freely in quite a

young state, and appear to be absolutely hardy. Mr. Wilson has sent over a great many wild Rose seeds, and most of them have germinated here; several are of the sericea type, and not all of them have yet flowered; of those which have,

none are equal to *Rosa Moyesii*, which was put on the market by Messrs. Veitch. This is really magnificent, a free upright grower, with delicate foliage and dark red flowers with velvety petals and showy gold centres; the fruits are long, large, and bright orange-red in colour. *Rubus Veitchii* is one of the best, with deeply cut, elegant foliage, rosy-purple flowers and red



SPIREA HENRYI IN VASE.

A new free-flowering Chinese shrub, producing white flowers towards the end of June.

fruits, the stems being pubescent in winter. *R. Giraldianus* has stems 8 to 10 feet high, of which the white colour produces a very ornamental effect in winter; it increases very freely by suckers, and to my mind is the best of the white-stemmed brambles. *R. lasiostylus dizygos* is about the strongest grower of any, having stems quite 10 feet high; they are closely set with short spines, and are of a pinkish plum

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colour, and make a brave show when the leaf is off; the fruit is large, red and edible. *R. bambusarum* and *R. Henryi* may be taken together, as they are very much alike, the only difference externally being that the very narrow lanceolate leaflets are joined together at the base in the case of the latter. Both are very striking and elegant plants, and so distinct that they do not suggest at first sight that they are brambles at all. *R. trullissatus* is also a vigorous grower, free flowering, and with white woolly-looking fruits. *R. ichangensis* is of moderate size, with long narrow leaves of a grey-steely lustrous appearance; it is only just hardy with me, but is beautiful in foliage. *R. irenæus* is a dwarf, quite prostrate on the ground, with largish round, vine-like leaves, the young growth of which is a very pretty bronzy-brown; it loves shade.

We owe many new *Spiræas* to Mr. Wilson's energy. Among the best are *Spiræa Henryi*, with a spreading habit, 7 to 8 feet high; flowers white, in rounded corymbs, appearing in May to June. The somewhat smaller and later flowering *S. 385*, has arching stems 4 to 5 feet long, and profuse blooms which are pink in the bud stage, and when open, pure white. *S. Veitchii*, a neat, upright growing shrub with small foliage, flowering rather later than the last—viz., in June to July. *S. arborea* (No. 1235), a strong grower of the *S. sorbifolia* type, with vivid-white flowers borne in huge panicles; a very showy, hardy plant, but requiring plenty of space; well suited for massing in a bed. *S. Wilsonii* is also a strong grower, flowering in June to July, and not without merit. All these *Spiræas* flower on the last year's wood.

Staphylea holocarpa is very distinct in foliage from *S. colchica* or *S. pinnata*, but it has not yet borne flowers in its new home, so I cannot describe them.

Stranvesia undulata is a valuable evergreen shrub, something like a *Photinia*, but quite hardy; the leaves are narrow, leathery, and dark green, turning to a bright red before they fall, and the fruits are orange-red, and borne in corymbs; the flower is inconspicuous. It would make a good plant for a large rock garden.

Our stock of *Viburnums* has been greatly increased of late, though nothing has yet been found to equal *Viburnum plicatum* in beauty of flower, although *V. tomentosum Mariesii* runs it hard. Of the new ones, *V. rhytidophyllum* is the popular favourite (see photo in JUNE IRISH GARDENING); its large rugose evergreen dark lanceolate foliage, of which the underside is covered with a dun-coloured tomentum like some of the Sikkim *Rhododendrons*, makes it very conspicuous, even without the large corymbs of dullish-white flowers; these form in

the autumn and are carried all through the winter, so that it runs a risk of their being damaged by frosts and failing to set its dark red berries, which are its great glory. *V. buddlei-folium* and *V. Veitchii* are closely allied, and come in the *Lantana* section, of which our native "Wayfaring Tree" is a familiar example. *V. Carlesii*, from Korea, has a great reputation—not that its white flowers with a rosy blush, borne in May, are extraordinarily beautiful, but because of their delicious fragrance, in which respect it is unlike some of its congeners, such as *V. utile*, whose flowers are similar in appearance, and come out at the same time, but smell offensively. This last is, however, redeemed by its neat, small, dark shining rugose evergreen leaves and graceful pyramidal habit, with long, slender drooping branches. Another evergreen *Viburnum* which is well worth growing for its distinct character is *V. Henryi*, which has glossy olive-green riband-like leaves, an erect habit, and a profusion of white flowers in June produced on the terminals, which should be followed by coral-red fruits in autumn, though our example—about four years old—has not yet fruited in this garden. *V. coriaceum*, whose name has been already changed to *V. cylindricum*, is a rapid-growing evergreen, forming a solid compact bush of large size and a peculiar glaucous green leathery foliage, which has the peculiarity that if rubbed with the hand a white mildew-like stain or smear is left; the flowers are of a creamy-white.

Tilia Oliveri bids fair to be a valuable addition to our Lime trees, the heart-shaped leaves and bright red sheaths which enclose the leaf buds producing a striking effect.

Of all the legion of new plants which Mr. Wilson's skill and activity has brought to our ken probably none will be of greater value and service than the *Cotoneasters* and *Berberis*, but two such excellent articles on these have appeared so recently in your columns that it does not seem worth while for me to travel over the same ground by describing them in detail. I will therefore confine myself to mentioning one of each—viz., *Cotoneaster divaricata*, because I had the honour of getting a first class certificate for it, and *Berberis Sargentiana* (No. 564), which is a handsome evergreen after the fashion of *B. Knightii* in its foliage, but which has greenish-white flowers, the only plant of this genus (though there may be others) which I can think of, that has not an inflorescence of some shade of yellow.

Of course this article merely represents rough notes on a few of our novelties, and I must apologise to your readers for its unscientific character, and to you, Mr. Editor, for the amount of your valuable space which it will take up.

The Culture of Cyclamen.

By A. CAMPBELL, Gardener to Lord Ardilaun,
St. Anne's, Clontarf.

CYCLAMEN, so largely used for pot cultivation, are almost confined to seedlings of *Cyclamen persicum*. So vast has been the improvement in size, colour, and freedom of blooming that the old variety is scarcely recognisable.

Their cultural treatment has also been changed; they are now stimulated into quick growth by having more warmth from the time the seeds are sown until they reach the flowering stage than was formerly recommended; the best results can now be obtained from plants of from 15 to 18 months old.

CULTURE.—Seeds can be sown according to the time the plants are required to be in bloom. If for autumn and winter flowering, they should be sown in August of the previous year in clean pans, with ample drainage, filled with a mixture of good fibrous loam, leaf-mould and silver sand; the surface should be made smooth, and watered some time before placing seeds on it; the seeds should be placed one inch apart; cover them with finely-sifted compost to a depth of $\frac{1}{4}$ inch, water with a fine rose-can, and cover the pans with glass or paper, so as to prevent evaporation, then place the pans where they will have a temperature of 60° . When the little plants appear remove the glass or paper covering, and place the pans near the glass, shade from bright sun, keep moist by spraying lightly morning and evening. For the winter a suitable temperature is from 50° to 55° . When the plants have made three leaves place them singly in small pots, using the same compost as formerly. Stand the pots on a moist bottom near the glass, and dispense with shading as the sun decreases in power. They must be kept steadily growing, so that by the end of March they will require moving into three-inch pots; add a little dried mellow cow manure, crushed brick or broken crocks to the compost at this move; keep up a temperature of 55° by night, and a proportionately higher one by day. Shade from bright sun, but let them have the evening and morning light. Care must be taken at all times that they do not suffer for want of water at the roots; the atmosphere must be kept moist, and also the material on which the pots rest. Spray them over with the syringe both morning and evening to prevent them being attacked by red spider. When they have well filled their pots with roots transfer them into 5-inch size and keep growing as hitherto, and admit air, but avoid draughts. By the end of June many of the stronger plants will require 7 or 8-inch pots, use the same compost as formerly, but much rougher. Allow them the same treatment and keep them growing

freely until September, when they should have more air, and withhold moisture from their foliage. In October they can be moved to their flowering quarters, where a dry, clear atmosphere and a temperature of about 50° should be maintained, when they will amply repay all the care bestowed on them.

The Rose Nurseries of the North.

How much Ireland owes to her Rose nurseries it would be hard to say. The output of plants annually must be enormous, and viewed as an industry the nation has reason to be proud of the success achieved by its sons. But few of the honours annually offered for Roses fail to find their way to Ireland, and even foreign countries have ere now been forced to express their admiration and appreciation of Irish Roses, in the shape of the highest awards they had it in their power to confer. This is a striking testimony to the energy and skill of the Irish trade growers, and judging from recent successes there is little to fear while the present race of growers are entrusted with the duty of maintaining Irish prestige.

During the first week of July it was a privilege to spend a few days among the Roses in the north. Our first visit was to Mr. McGredy's Royal Nurseries, Portadown. We were fortunate in having Mr. McGredy himself as our guide, and to spend a few hours with him among his Roses, many of them his own raising, is a treat of no mean kind.

Our first hint of the magnitude of the Rose industry was a huge house of plants in pots, each carrying several seed vessels, some just beginning to ripen. The crop of seed this year will be enormous. Planted against the end of this house Mr. McGredy proudly showed us a fine plant bearing hundreds of "hips"—a plant which has produced some of the finest Portadown Hybrids. It was a seedling from La France, and is itself a fine Rose, which, however, Mr. McGredy meanwhile retains as a producer of further novelties. In succession we were shown a house containing thousands of seed pots, and another house of seedlings in flower, many of them yet to be tested thoroughly. From these early stages we passed to the fields, where thousands of tried and untried varieties engaged our attention for several hours. This year the plants are flowering later than usual at Portadown, but from what we saw of the thousands of seedlings in flower and bud, the Royal Nurseries will give a good account of themselves at the later shows. A feature of Mr. McGredy's later seedlings is the number of dark-red Hybrid Teas which are coming on. This will be appreciated by growers who have long wanted good, early and continuous flowering dark Roses. Passing from the seedlings we enjoyed looking over the fine stocks of recent varieties which have made Portadown famous. Last year no fewer than four gold medals and five silver gilt medals were awarded to Mr. McGredy's Roses. His success with British Queen, the finest white Rose yet raised, is fresh in our minds, and there are other fine things to come. A few of his recent novelties are Lady Mary Ward, Old Gold, Mrs. F. W. Vanderbilt, Mrs. Edith Part, Colleen, Mrs. C. E. Pearson, Earl of Gosford, Mrs. Muir McKean, and Mrs. Wallace H. Rowe.

Although Roses are the chief culture there are other interests. Perpetual flowering Carnations are largely grown, also Lilliums, &c., for the cut-flower trade. Mr. McGredy is remarkably successful in propagating the double white *Gypsophila* from cuttings, and has distributed many thousands.

"HAWLMARK," NEWTOWNARDS.

Our next view of the Rose industry was at Newtownards, where we had the privilege of visiting the famous nurseries of Alex. Dickson & Sons, Ltd., a name to conjure with in the world of Roses. Although Mr. Geo. Dickson, Junior, had just returned from the National Rose Society's Show, he at once gave us his best attention, and subsequently placed us in charge of Mr. Hugh Dickson, who presides over the seed business, and the very capable nursery foreman.

After a run through the enormous houses devoted to seedling Roses and Carnations we proceeded direct to the Rose fields. The particular one we were able to inspect contained 100,000 plants, the picture of health and vigour, and comprising all the leading varieties of the day, and that is tantamount to saying that home-raised varieties were numerous. Another field some distance away contained, we were told, 150,000 plants, while the seedling trial field we could only glance at in passing. The vigorous appearance of the plants was remarkable, and bespoke a Rose soil and good cultivation, and the long rows, mostly of one sort, provided a unique opportunity of noting the habit and various characteristics of each variety. Naturally, the "Hawlmarm" novelties of recent years were well represented, and a finer lot probably does not exist. Where all are so fine it is difficult to particularize. To attempt to describe this or that variety as very fine, superb, or magnificent would convey nothing to the reader of what one feels when looking at the actual plants or enjoying the pleasure of freshly cut flowers freely presented by our guides. I am not going to write down a long list of the varieties we saw, since the firm's catalogue may be had for asking, and it is well worth a postcard; but reference must be made to some recent novelties ere we close. George Dickson is certainly one of the most sensational Roses ever raised, and well calculated to do honour to the venerable rosarian whose name it bears. It is a Hybrid Tea with the vigour of a Hybrid Perpetual, and of a dark, velvety crimson, shaded in a way which defies description. Other new varieties of 1912 are C. W. Cowan, Hybrid Tea, carmine-cerise; Duchess of Sutherland, Hybrid Tea, rose-pink with lemon shading; G. Henslow, Hybrid Tea, orange-crimson; Mrs. F. Bray, Hybrid Tea, coppery-fawn, shaded shell-pink; Mrs. G. Sloane, Hybrid Tea, a lovely combination of copper, salmon, pink and flesh-white; Mrs. H. Hawksworth, a Tea-colour, delicate cream on a white ground; and Verna Mackay, Hybrid Tea, a lovely flower of ivory sulphur-buff, changing to lemon. These brief descriptions, which are adapted from those of the raisers, fail to convey a correct idea of the beauty of the flowers. Other fine things are Queen Mary, which won the gold medal at the "National" this year, and some 1911 varieties—notably, A. Hill Gray, a vigorous Tea; Melody, a charming saffron-yellow Hybrid Tea; Carine, a delightful combination of carmine-buff and salmon; Duchess of Westminster, Hybrid Tea, rose-madder; Mabel Drew, deep cream, passing to canary, and many others.

The Newtownards firm is also famous for Sweet Peas, and carry out extensive trials there of new varieties side by side with older sorts. This year the firm have seven miles of Sweet Peas growing for seed, which will give some idea of the volume of business done. Mr. Hugh Dickson is an acknowledged expert in Sweet Peas, and has visited California in pursuit of information regarding his special flower. We had the benefit of his guidance through the trials. In the "Hawlmarm" collection nothing inferior is tolerated, and Mr. Dickson rigidly selects the best. Different stocks are carefully compared, and too much alike varieties minutely examined—only the best surviving the ordeal. Herewith is appended a select few quoted by Mr. Dickson as in his opinion the best of their colour:—Blues, Wedgwood Blue, and Blue King; King White (Hawlmarm novelty), May Campbell, streaked red; yellows, Clara Curtis and Dobbies Queen; darks in the way of Nubian, King Manuel, and Mr. E. Cowdy; pink, Mrs. Hugh Dickson, Doris Usher, Margaret Atley; and Barbara, a good grower, not quite so deep as Stirling Stent.

It should be stated in closing that although mention of the awards to "Hawlmarm" Roses would occupy more space than the Editor might care to allow, a few days after our visit the 100 guineas challenge cup offered by the Northern Counties Society at Saltaire was awarded to A. Dickson & Sons, Ltd.

THE ROYAL NURSERIES, BELFAST.

Here another branch of the family carries on with equal success the fascinating business of Rose growing and raising. Saturday found us knocking at the door of Mr. Hugh Dickson's handsome residence, and we were warmly welcomed by him. A new feature here met our view in a series of beds grouped near the house and extending on down to the glass structures, each bed planted with one variety of Rose. The flowers were not fully expanded in many cases, but sufficient were showing their colour and form to give an idea of the exquisite effect soon to be produced. It is an admirable way of showing the true garden value of a Rose, and one which visitors must find enormously helpful in making selections for their own gardens. Incidentally we were told some of the beds had been ten years planted, and were still in vigorous condition. More recent beds had been planted to do away with the necessity for annual bedding out, a system not found satisfactory. One bed filled with that fine scarlet variety, General MacArthur, was a picture, and J. B. Clarke occupied a corner position which had proved too draughty for most things, but the Roses were happy.

After a preliminary look at the beds we proceeded to the seedling trial field. Here the plethora of colour and variety was at first bewildering, but soon, under the skilful guidance of Mr. Dickson, we were admiring the thousands of beautiful seedlings, many just opening and others in full bloom. This field contained something like 21,000 plants in about 4,000 varieties, but a very few yet named. Thus we gain some idea of the extent of the seedling raising carried on in Ireland. It was with pleasurable excitement we examined the new variety, "Brilliant," which won the gold medal at the National Rose Society's show and gained a host of admirers. It is a lovely brilliant scarlet Hybrid Tea, of fine form and great vigour, and will soon be immensely popular. Here too we were fortunate in seeing the gold medal, National Rose Society, Mrs.

James Lynas, a charming blush pink Hybrid Tea, which will be much sought after. Other new varieties which have recently won medals are Wm. Cooper, a deep rose-coloured Hybrid Tea; Mrs. J. W. Parker, a blush-coloured Hybrid Tea; Ulster Gem, a single decorative Rose, sulphur-yellow in colour; Muriel Dickson, a Hybrid Austrian Briar, of lovely carmine-rose tint. Others which were highly honoured by the National Rose Society were Duchess of Abercorn, a Hybrid Tea, of a soft creamy-buff hue; Mrs. Godfrey Brown, rose-pink, shaded salmon;

worth, and Countess of Shaftesbury, Leslie Holland, &c., will not easily be displaced.

The bulk of Hugh Dickson's Roses are grown at Dundonald, some distance away; but we had not time to see them. We were more than satisfied with our delightful view of the new seedlings.

In addition to Roses large stocks of finely grown Conifers of popular kinds filled neighbouring quarters, together with shrubs and fruit bushes in great variety. Mr. Dickson has worked up a large stock of a very fine type of Briar Stock, which he himself selected, and of



HYBRID TEA QUEEN MARY.

Colour, a combination of bright pink and pale gold. Raised by Messrs. Alex. Dickson. Gold Medal, N. R. S., July 4, 1913.

Mrs. W. Sargent, creamy-white; Ulster Standard, a large, single crimson variety. These are but a few varieties of this year already attracting much notice. What the remainder of the season will bring forth one can hardly forecast.

It is needless to refer to the firm's previous fine varieties, since all Rose lovers know that magnificent dark crimson Hybrid Tea, King George V., so also are Mrs. Sam Ross, Mrs. R. Draper, and Mrs. D. Baillie well-known medal Roses, yet they were new only in 1912. The Belfast novelties of a year or two ago are now frequent on the show boards, a testimony to their

this we saw many thousands in other fields, with the "budders" busy at work among them.

Altogether we spent a most enjoyable time among the Roses in the north, and having been rested and refreshed through the kindness and hospitality of Mr. Hugh Dickson and his good lady, we made our way citywards, and thence to Dublin. Ere finally closing it is but just to say that at the recent show of the National Rose Society the new Roses of Hugh Dickson, Ltd., received the unique honour of no less than ten awards, comprising two gold medals, five silver gills, and three cards of commendation.—B.

Gooseberry Cluster-cup Disease.

WHETHER it is because this disease is becoming more common or because, as is perhaps more probable, growers since the advent of the dreaded

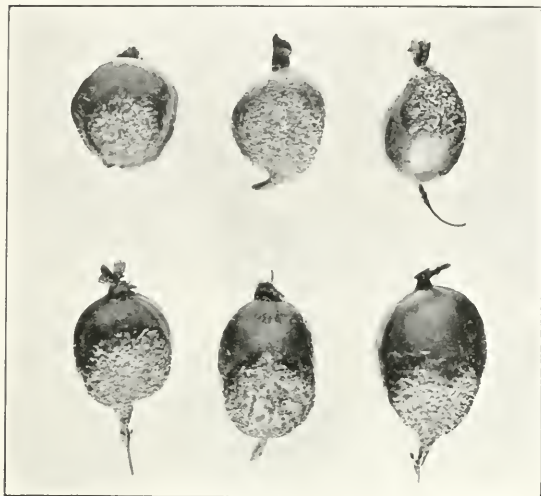


Fig. 1.—Gooseberries showing areas affected with the cluster-cup fungus.

American gooseberry mildew are more on the alert for signs of disease of any kind in their gooseberry bushes, it certainly is a fact that enquiries concerning this trouble have been becoming more and more numerous during the past few years. Hence a brief account of it may perhaps be acceptable to the readers of this paper.

In the first place it may be stated that the disease has been known for a very long time, and that its ravages are as a rule not very serious. Nevertheless, the diseases due to the "rust fungi"—and this is one of them—are in many cases of such supreme economic importance that it would be unwise to suppose that the gooseberry cluster-cup disease may not at some future time assume serious epidemic proportions.

The disease appears both on the leaves and on the berries, at first in the form of reddish-yellow or orange-coloured thickened areas with a smooth surface. Later on this smooth surface becomes broken up by the bursting forth from beneath it of numerous cup-like bodies, each of which has a more or less jaggedly-fringed margin and contains numerous yellow spores. These spores are discharged from the cups, and at this stage the diseased areas are of a lighter yellow colour than previously.

The accompanying figure 1 shows a few berries affected with the cluster-cup disease, while in figure 2 is shown, considerably enlarged, a small portion of the diseased area of one of these berries. The clusters of partially emptied cups, with their reflexed fringed margins, are clearly defined, but the magnification is not sufficiently great to show the spores themselves.

As indicated above, the fungus which produces the disease is one of the group of rusts all of which are strict parasites, and have for the most part more or less complicated life histories.

ment many rusts (including the present one) require two host plants. On the one they produce spores which differ completely from those which are developed on the other, and it is not surprising that before the life-histories of these rusts were understood mycologists regarded the different stages on the separate hosts as distinct fungi, and named them accordingly. Thus, in the case of the gooseberry cluster-cup fungus, the stage on the gooseberry was formerly known as *Accidium Grossulariae* Pers., while its more correct name is now *Puccinia Pringsheimiana* Kleb.

Now, the spores which are produced in these cluster-cups will not themselves cause the infection of gooseberry leaves or fruits, consequently they are not the direct cause of the spread of the disease in the summer. On the other hand, it has been shown that they will germinate on and produce pustules of other kinds of spores on certain species of sedge—namely, *Carex acuta* L. and *C. Goodenowii* Gay. Further, it has been shown that these other spores, produced on the sedges, will, if they reach gooseberry bushes in the spring, produce on the foliage and fruit the cluster-cup disease.

From a knowledge of the life-history of this fungus, therefore, it is possible to suggest means for the prevention of the disease. First, all affected berries and leaves should be gathered and burned, thus cutting off the source of infection of the sedges. Secondly, ditches and other damp places in the neighbourhood of gooseberry plantations where sedges are likely to grow should be kept well trimmed and free from rank growth. It is on the sedges that the fungus passes the winter, and it is from them that the gooseberry bushes are infected in the spring.

It is here tacitly assumed that the second host is absolutely necessary for the continuance of the life of the fungus. It is, however, only fair to add that it is now well known that in the case of some rusts, at any rate, the presence of the second host is *not* necessary. Thus in the case of one of the wheat rusts the second host plant is the barberry, but this wheat rust occurs and recurs in places where barberries are conspicuous by their absence. Hence, the fungus must have some other means at its disposal enabling it to appear every year in its rôle as a disease-producer.

It would be going too far to discuss this matter here, suffice it to say that it is possible that the



Fig. 2.—A small portion of the diseased area showing the clustered cups (considerably enlarged).

gooseberry cluster-cup fungus may be able to dispense with the stages on the sedge altogether, or possibly there may be some other host plants which play the same part as the sedges do. These are matters which can only be solved by future research, and the above described means of dealing with the disease are the only ones which the present state of our knowledge enables us to suggest.

G. H. P.

Notes from a Small Rock Garden.

By E. B. ANDERSON, Gilford Avenue, Sandymount.

BEFORE talking about some of the plants growing in my very small rock garden, it will be best to give some idea as to its soil and aspect.

The soil is a very sandy loam overlying pure sea sand, and is only 1 to 2 feet deep, the drainage therefore is perfect. The garden faces south-west : receives therefore plenty of sun ; the fences give shade on one side up to about 10 a.m., on the other from 2 p.m.

The natural soil has had a load or so of loam added, and is full of stones and chips, and in this mixture most of my plants are growing, except where stated otherwise.

Myosotis rupicola was splendid in a half-shaded moraine of chips, peat and leaf-mould. The plants are two years old, and were covered with exquisite blue flowers.

As it is rather troublesome to grow, I experimented according to two recipes. One lot was planted in loam wedged between two tiles in a shady place near a little peat bed. They flowered fairly well last year, but either went off in the winter or early in spring. Another batch was planted in heavy loam near the same peat bed and in shade, and protected with a glass during the winter ; they came through the winter alright and flowered, but one by one died off during the summer without apparent cause ; the last one made a feeble growth this spring and then died. So my only real success is in the shaded moraine, where they have now flowered and seeded twice, and one or two self-sown seedlings have appeared, but so far only one has survived the slugs, which are very fond of this plant. I also have some small plants in full sun in a little wet moraine ; they are quite healthy, but were only planted this spring. This plant is so beautiful that I cannot apologise for such extended remarks, unless I hear that I am the only one who has had any difficulty with it.

Geranium cinereum album is new and very pleasing ; the white flowers, with green centres, are very pretty and freely borne. It appears quite easy to grow in a light soil and sunny aspect.

Androsace lanuginosa alba.—We often pine for albinos, and yet when we get them they are often not more beautiful than the type. It is so in this case. The flowers open pure white, with a greenish-yellow eye, which fades to red-purple, and occasionally the flowers have a slight shade when dying. It is rare and interesting, but not more beautiful than the type, which is flowering splendidly with me this year.

Viola floraiensis.—I have two plants raised from seed of above which are giving me great

pleasure. The growth is vigorous, but compact, and the plants are flowering freely. The flowers are shaped like *V. cornuta* Papilio, but are coloured differently. No. 1 has the lower petals lavender-blue, the two upper a distinct reddish-purple. No. 2 is very like Papilio, but much bluer.

This brings up the question of the origin of *V. cornuta* Papilio ; it certainly is not a true *cornuta* type. Is it a hybrid like *V. floraiensis* ? It is a cheery thing, flowering continuously and seeding all over the place.

Wahlenbergias graminifolia and *dalmatica* do very well with me. Two plants of the former on a very dry ledge have about forty heads of bloom between them, and two on a very high and dry moraine about the same number. When blooming like this they are very effective.

But the champion is *W. dalmatica* planted on a sunny crevice. One plant last year bore over forty heads of bloom. I thought after such an effort it must surely die ; but no, this year there are about thirty-six heads just coming into bloom.

Lastly, a word about the exquisite *Wahlenbergia gracilis*. I purchased a plant last spring, when it had not been boomed, and was only 1s. 6d. It formed a bush 8 inches high and the same across, and was a mass of bloom, most delightful to see. At the time it had a horrible biennial appearance about it—all flower and no leaf, or unflowering shoots, but about March a little growth appeared, which, alas ! speedily succumbed to our wondrous climate. Again in April it made an effort to grow, and has survived ; but, oh ! such a wretched remnant of its former self—a few shoots, 3 inches high, not yet flowered. It is in sandy stony loam in full sun and sheltered from north by a wall.

Have any other readers of IRISH GARDENING experience with this plant ?

Pentstemon triflorus.

THIS fine species has been flowering freely through July, and will continue until the end of the autumn. A native of Mexico, it was introduced by the Bees, Ltd., in 1908, under the name of *P. isophyllus*. The plants are sub-shrubby, and grow from 2 to 4 feet high, according to the richness of soil and the climate. The stiff, erect flower stems carry narrow panicles of coral-red flowers, about 1½ to 2 inches long ; usually three flowers are borne on short stems, springing from the axils of the leaves.

Like other members of the family, *P. triflorus* may be easily raised from cuttings, and in some seasons seeds ripen freely. It is a good plant for the border, but in the colder localities some protection, such as litter or ashes around the roots, should be given.

Pentstemon cordifolius.

WE sometimes see this *Pentstemon* grown on a border and cut down yearly with the herbaceous plants ; even in this way it is effective. The plant comes from California, consequently is not so hardy as one could wish ; in reality it is a climbing shrub, and should be treated as such. At Glasnevin there is a fine plant on a wall covering a stretch of 10 feet. When covered with the curving bright scarlet flowers in August it is most effective.

Fruit Crop and Fruit Prospects (Ireland), 1913.

NOTE.—The date of this Report may be taken as up to the middle of July. In order to secure as much uniformity as possible in the Return a scale of descriptive terms was agreed upon—viz., (1) very good, (2) good, (3) average, (4) below average, (5) bad. The names of the County Horticultural Instructors are starred (*).

County and Locality	Apples	Pears	Plums	Cherries	Gooseberries	Currants	Raspberries	Strawberries	Name of Correspondent
ULSTER									
<i>Antrim</i> —County . . .	Below av.	Bad	Bad	Below av.	Very good	Very good	Below av.	Very good	R. H. Clarke *
Langford Lodge . . .	Below av.	Below av.	Below av.	Below av.	Very good	Very good	Average	Very good	H. Dew
Shane's Castle . . .	Below av.	Bad	Below av.	Bad	Very good	Very good	Very good	Average	W. G. Wadge
<i>Armagh</i> —County, North . . .	Bad	Bad	Below av.	Few grown	Good	Average	Average	Good	F. Hagan *
" South . . .	Bad	Bad	Below av.	Below av.	Good	Average	Average	Average	J. Tunnington *
Manor House . . .	Bad	Bad	Bad	Average	Very good	Below av.	Good	Good	W. R. Spencer
Portadown . . .	Below av.	Bad	Bad	Good	Very good	Good	Good	Good	P. H. Spence
Anagallumore . . .	Bad	Bad	Bad	Bad	Average	Below av.	Average	Very good	J. J. W. Dunlop
Fetish . . .	Below av.	Bad	Below av.	Bad	Very good	Below av.	Very good	Very good	A. Robinson
<i>Down</i> —County . . .	Bad	Below av.	Bad	Average	Good	Very good	Good	Good	P. J. O'Carroll *
Bruckless . . .	Below av.	Not grown	Below av.	Not grown	Good	Very good	Not grown	Good	J. H. Pollock
Down—Moyallen . . .	Below av.	Bad	Average	Good	Very good	Very good	Good	Very good	J. Lynas
Crawfordsburn . . .	Below av.	Below av.	Bad	Average	Average	Very good	Good	Very good	A. W. Malpas
<i>Fermanagh</i> —County . . .	Bad	Below av.	Bad	Good on walls	Average	Below av.	Good	Promising average, but late	P. Brock *
" generally . . .									
<i>Crom Castle</i> . . .	Below av.	Bad	Bad	Very good	Good	Good	Average	Good	A. Reid
<i>Londonderry</i> — <i>Monaghan</i> . . .	Bad	Bad	Bad	Not grown	Average	Very good	Very good	Very good	G. Fraser
Draperstown . . .	Bad	Below av.	Bad	Bad	Good	Bad	Good	Very good	J. Diamond
Downhill . . .	Average	Below av.	Average	Good	Very good	Good	Average	Very good	C. W. Lynes
<i>Monaghan</i> —County . . .	Bad	Bad	Bad	Not many grown, average	Very good	Very good	Very good	Very good	J. G. Tonar *
<i>Tyrone</i> —Clogher . . .	Bad	Bad	Danmons bad	Not grown	Very good	Bad	Promising good	Average	D. McLaren
Barronscourt . . .	Below av.	Bad	Bad	Bad	Very good	Good	Good	Good	T. H. Yea
Sion House . . .	Below av.	Bad	Bad	Bad	Good	Average	Good	Very good	F. W. Walker
MUNSTER									
<i>Clare</i> —County . . .	Below av.	Below av.	Average	Average	Good	Good	Good	Good	J. Grennan *
Newmarket . . .	Below av.	Bad	—	—	Very good	Good	Good	—	P. Quealy
Dromoland Castle . . .	Below av.	Below av.	Below av.	Average	Very good	Very good	Very good	Very good	J. Carter
<i>Cork</i> —County, East . . .	Bad	Average	Average	Average	Good	Very good	Very good	Good	J. Blenkins *
" West . . .	Good	Average	Average	Average	Very good	Very good	Very good	Good	S. E. Cavanagh *
County . . .	Below av.	Bad	Below av.	Bad	Average	Good	Good	Good	J. Dearnaley
Queenstown . . .	Below av.	Bad	Good	Below av.	Good	Good	Good	Good	W. Beswick
Coma . . .	Very bad	Very bad	Good	—	Good	Good	Good	Good	M. Collier
Doneraile Court . . .	Bad	Below av.	Below av.	Average	Good	Very good	Average	Good	W. Campbell
<i>Kerry</i> —County . . .	Bad	Bad in open good on walls	Bad	Good	Good	Very good	Good	Below av.	W. F. Earls *
Ballyheigue . . .	Below av.	Average	Bad	Bad	Below av.	Good	Good	Very good	W. Barrett
Killarney . . .	Below av.	Below av.	Average	Average	Very good	Very good	Very good	Bad	A. J. Elgar
<i>Limerick</i> —County . . .	Below av.	Bad	Good	Good	Very good	Very good	Good	Good	J. Malone *
Clarina . . .	Below av.	Below av.	Average	Average	Very good	Very good	Good	Very good	Chas. J. Kempton

<i>Tipperary</i> —County, South	Bad	Below av.	Bad	Below av.	Good	Good	Good	Average	Very good	J. J. Rutheford *
"	Below av.	Average	Bad	Average	Below av.	Good	Good	Very good	Very good	J. J. Bracken *
Cahir	Below av.	Bad	Bad	Bad	Very good	Good	Very good	Very good	Very good	E. J. Rogers
Clonmel	Below av.	Bad	Bad	Below av.	Good	Very good	Very good	Very good	Very good	W. Bruce
<i>Waterford</i> —County	Below av.	Bad	Bad	Below av.	Good	Very good	Good	Good	Good	J. Hanrahan *
Currane	Below av.	Bad	Bad	Below av.	Bad	Below av.	Average	Bad	Good	D. Cronbie
Dungarvan	Average	Bad	Bad	Average	—	Good	Average	Average	Good	D. Lynch
LEINSTER										
<i>Carlow</i> —County	Bad	Below av.	Bad	Below av.	Average	Very good	Very good	Very good	Very good	J. M'Kenzie *
Oak Park	Below av.	Average	Bad	Good	Average	Very good	Very good	Good	Very good	J. Besant
Millford	Bad	Good	Bad	Good	Average	Very good	Good	Average	Good	J. Ryan
<i>Dublin</i> —County	Bad	Below av.	Below av.	Below av.	Below av.	Very good	Very good	Very good	Very good	P. J. Gray *
Druincondra	Below av.	Bad	Bad	Good	Average	Very good	Very good	Good	Below av.	C. Larkin
Bremnanstown	Bad	Below av.	Bad	Below av.	—	Good	Good	Good	Very good	W. Usher
St. Anne's	Below av.	Average	Below av.	Average	Good	Very good	Very good	Average	Very good	A. Campbell
<i>Blackrock</i>	Bad	Average	Bad	Average	Average	Very good	Very good	Very good	Very good	W. Baker
<i>Kilkenny</i> —The Castle	Below av.	Below av.	Below av.	Below av.	Bad	Very good	Very good	Very good	Very good	E. Sutton
Piltown	Average	Below av.	Bad	Below av.	—	Good	Average	Below av.	Good	P. Lynch
Flood Hall	Average	Below av.	Bad	Below av.	Bad	Very good	Very good	Very good	Very good	J. Stark
Bessborough	Below av.	Below av.	Bad	Below av.	Below av.	Good	Very good	Very good	Very good	T. E. Tonnalin
<i>Kildare</i> —County	Average	Average	Bad	Below av.	Below av.	Good	Very good	Average	Very good	W. Tyndall *
Carlton	Below av.	Very good	Below av.	Average	Below av.	Good	Very good	Good	Very good	A. Black
Kilmaroney	Average	Average	Below av.	Below av.	Bad	Good	Very good	Good	Good	T. Gamage
<i>King's</i> —Tullamore	Very good	Average	Below av.	Below av.	—	Average	Very good	Average	Below av.	W. Roberts
Edenderry	Average	Below av.	Bad	Below av.	Bad	Average	Very good	Average	Very good	Wm. M'Dowell
<i>Longford</i> —County	Below av.	Below av.	Below av.	Below av.	Bad	Very good	Very good	Good	Very good	W. Johnston *
Edgeworthstown	Good	Good	Below av.	Below av.	Average	Good	Good	Good	Good	W. Scott
Castle Forbes	Average	Average	Bad	Below av.	Below av.	Below av.	Very good	Below av.	Very good	J. A. Boyle
<i>Louth</i> —County	Bad	Bad	Bad	Bad	Bad	Below av.	Average	Very good	Very good	J. Harney *
Drogheda	Bad	Bad	Bad	Bad	Bad	Below av.	Average	Very good	Very good	J. Farrell
<i>Meath</i> —County	Bad	Below av.	Below av.	Below av.	Average	Very good	Very good	Very good	Very good	J. B. Clark *
Dunsany Castle	Bad	Below av.	Below av.	Below av.	Average	Very good	Very good	Very good	Very good	J. B. Pow
Kells	Very good	Average	Average	Average	Bad	Very good	Very good	Good	Very good	T. Calthorpe
<i>Queen's</i> —Mountrath	Bad	Below av.	Below av.	Below av.	Below av.	Good	Very good	Very good	Very good	H. Thornton
Brookley Park	Bad	Below av.	Bad	Below av.	—	Very good	Very good	Very good	Very good	Thos. Ryan
Abbeyleix	Below av.	Below av.	Below av.	Below av.	Bad	Very good	Very good	Good	Very good	Geo. M'Glashan
<i>Wicklow</i> —Pakenham Hall	Below av.	Below av.	Below av.	Below av.	Average	Very good	Very good	Average	Very good	Geo. Bogie
<i>Wexford</i> —County	Bad	Below av.	Bad	Below av.	Average	Very good	Very good	Average	Good	W. Hillock *
Castle Boro'	Average	Below av.	Below av.	Below av.	Below av.	Good	Very good	Average	Good	C. Connen
Johnstown Castle	Bad	Below av.	Below av.	Below av.	Good	Very good	Very good	Bad	Very good	E. Slavin *
<i>Wicklow</i> —County	Bad	Below av.	Below av.	Below av.	Below av.	Very good	Very good	Good	Very good	P. Cullen *
Glenart Castle	Bad	Good	Bad	Below av.	Bad	Very good	Very good	Good	Average	W. Bailey
Skelton Abbey	Below av.	Average	Below av.	Average	Good	Good	Very good	Below av.	Very good	J. Shivas
CONNAUGHT										
<i>Galway</i> —County	Bad	Good	Bad	Very good	Average	Very good	Good	Good	Good	P. J. M'Nicholas *
Kylemore	Bad	Bad	Bad	Very good	Bad	Very good	Good	Good	Good	M. Gibbons
Athenry	Bad	Average	Bad	Very good	Average	Very good	Good	Very good	Very good	H. Davidson
<i>Mayo</i> —County, North	Below av.	Below av.	Bad	Very good	Average	Very good	Good	Good	Good	F. F. Reilly *
"	Bad	Average	Average	Very good	Bad	Very good	Good	Good	Good	M. Jordan *
<i>Roscommon</i> —County, South	Below av.	Below av.	Below av.	Very good	Average	Very good	Good	Good	Very good	E. H. Bowers *
Frenchpark	Average	Below av.	Below av.	Average	Below av.	Average	Below av.	Average	Average	T. Rogers
Castlerock	Bad	Below av.	Below av.	Average	Average	Very good	Very good	Very good	Very good	J. Bennett
<i>Sligo</i> —County	Below av.	Below av.	Below av.	Good	—	Good	Good	Good	Bad	J. C. Curley *
Markree Castle	Bad	Below av.	Below av.	Average	Below av.	Good	Good	Good	Very good	H. Cousins
Lissadell	Average	Below av.	Below av.	Good	Below av.	Good	Good	Good	Very good	J. A. Cooper

Fruit Crop, Ireland, 1913.

By W. S. IRVING, Chief Inspector with regard to Irish Fruit Culture.

THE reports of correspondents from different parts of Ireland show another very unfavourable tree fruit year. It is the worst year of which I have any record. Owing to the very wet and cold autumn of last year the majority of the trees were unable to mature a large number of fruit buds, with the result that, except in a few places, we had not such a good show of blossoms as we had last year, and many of those which did flower were weak and unable to withstand the cold, wet and sunless spring of this year. To this, combined with the very severe hail-storms during the latter half of May and the cold, wet spring, may be attributed the chief cause of the failure of the large tree fruit crop. Very few trees which bore a good crop last year are bearing many fruit this year, and large market growers are great sufferers owing to the scanty crops in the commercial districts following last year's bad crop. In most districts the season is about ten days later than the average.

In general much of the planting, pruning and spraying was very late in being carried out this year, owing to the wet weather and the state of the ground.

Old and young trees have suffered alike. Usually young trees are able to withstand the effects of the cold weather better than the older ones, but it is only in extra well sheltered positions that there is even a fair crop of fruit. It is, however, some satisfaction to be able to record a good crop of small bush fruit. These in general have done well in all parts of the country, both private and commercial growers having excellent yields of good quality fruit.

Apples in general are from average to a bad crop, and there are very few good crops in the country this season. Though the trees did not flower so freely as is usual, there was enough blossom to give a good crop of fruit if they had set, but this was prevented to a large extent by the hail-storms and attacks of apple sucker.

The fruit, however, is swelling rapidly, and though we may not have even the quantity of last year there is every prospect of the quality being much better.

The trees, though not bearing heavily in most cases, have a more healthy-looking appearance than at this time last year.

Bramley's Seedling, Worcester Pearmain, and Early Victoria are the only varieties which are bearing anything like a crop. There are a few fruits on Cox's Orange Pippin, Lane's Prince Albert, Allington, Newton Wonder, Blenheim Orange and Grenadier.

Pears flowered fairly well in most cases, but very few fruit have set, and the majority of the trees are carrying from a below average to a bad crop, especially in the open. On wall trees, where the wood ripened well last autumn, and where the blossoms were protected, there is a fair crop of fruit, but it is only on wall trees that there are many pears this year. No special variety appears to have escaped the ravages of the cold and wet spring, as all have suffered. It is the worst year for pears that I remember.

Plums and Damsons.—We had a rather heavy crop on the whole last year, and the trees did not

flower anything like so well this year. It is some time since I saw so few flowers on the trees as was borne this year. On walls they are a fair crop, but in the open they are very poor, in fact the worst crop for the last ten years. Victoria is the only one which is bearing even an average crop.

Cherries, on the whole, are a below average crop. The trees flowered fairly well, but, owing to the cold excessive rains and hail, they did not set well, and many of those which did set dropped off. Black fly was very destructive on the tips of the young shoots, and has caused much injury to the trees. Morellos are bearing a fair crop.

Gooseberries are what I may call the best crop of the year, as even where large quantities are grown the crop is a very heavy one, and the quality of the fruit is very good. Very good samples are coming into the Dublin market. Even old bushes which did not make much young wood last year are bearing very well on the old spurs. Birds have not done so much damage to the bushes as they are in the habit of doing.

Black currants are on the whole a good crop, and the fruit is of good quality. The bushes made very good growth last year, and even though the autumn was bad, the wood ripened up very well. In odd places the hail-storms played havoc with the plants when in bloom, destroying the flowers. The area under black currants is increasing rapidly in Ireland, and that under red and white currants is rapidly decreasing, as the prices obtainable are not found remunerative.

Raspberries are a good crop in general, and the fruit is of very good quality, and fair to good prices are being obtained. Superlative and Gormanstown Seedling are in most cases doing well. A new variety, Bath's Perfection, is very variable; in places where the soil is heavy it is doing extra well, whilst in others, especially a light soil, it is more or less a failure. The plants are throwing up a good succession, and neither weevil or rust are so prevalent as last year.

Strawberries on the whole are a good crop. The plants are healthy and flowered well, but, owing to the want of warmth and sunshine to bring them on, the fruit is late in ripening. The area under this crop is decreasing very much owing to the small price obtainable, and because of such large quantities being shipped from England. Very good prices are, however, being obtained in Dublin and Belfast for good samples of Irish fruit.

INSECTS.—One thing we have to be thankful for, and that is that the cold and wet season prevented the rapid increase of many of the insect pests which cause so much damage. The most damage appears to have been done by aphid on plums and apples, and apple sucker on apple trees. I consider that apple sucker is the worst insect enemy that apple growers have to deal with, as it may cause much damage without being detected. Many of the dead trusses of flowers which we see on the trees are killed by this insect, and not, as is often supposed, by frost. There are few orchards in this country in which the apple sucker is not more or less prevalent, and it would be well for all growers to make themselves acquainted with it. It may be kept under by the use of paraffin emulsion or nicotine spray fluids.

Forty per cent. of the correspondents give

green fly as one of their worst enemies, next come 30 per cent. with winter moth, which caused much damage this year, destroying practically a whole plantation of black currants in Co. Tyrone: American blight was bad with 20 per cent., gooseberry sawfly caterpillar with 18 per cent., apple sucker with 15 per cent., codlin moth with 11 per cent., ermine moth with 6 per cent., black currant mite with 5 per cent., and pear midge with 3 per cent.

Though insect pests have not been so troublesome as usual, fungoid pests are much worse. Apple scab and canker are the worst fungoid pests with 30 per cent. each. These have caused much damage to apples and pears this year, canker being very prevalent on comparatively young trees. No less than 11 per cent. give American gooseberry mildew as one of their worst pests. It is undoubtedly a very bad disease, and all bushes found diseased should be immediately burned. It is causing much loss and anxiety to commercial growers as up to the present no cure has been found. Apple mildew is given by 9 per cent. This is on the increase, but can be kept down by spraying with a $\frac{3}{4}$ per cent. solution of Bordeaux mixture. Brown rot is given by 6 per cent., and silver leaf on plums by 3 per cent.

Much spraying, pruning and regrafting has yet to be done to combat the two worst fungoid pests—i.e., canker and scab. Mildew has not caused so much damage to the strawberry crops this year as it usually does.

To sum up, I may state that the large tree fruit crop is a poor one, and that the bush fruit crop is a good one in general.

I wish to offer my sincerest thanks to the numerous correspondents for their great kindness in filling in and returning the forms.

Saxifraga longifolia.

If only this Saxifrage would refrain from dying as soon as it has flowered what a priceless treasure it would be! It seems absurd that one should hope against hope that a particular plant is *not* going to flower when the flowers are so charming, yet how many of us are there who grow the plant and do not sigh when we see the unmistakable signs in the

centre of the rosette that foretell the coming of the flower spike? The flowers on the plant illustrated in the photograph are unusually pure in tone without the least spot or speck, but with the surrounding rocks covered with *S. aizoon* forms in full flower it is very doubtful if any of the seedlings will come true. The rosette of this particular plant was not very large—about 8½ inches diameter—and it has flowered much sooner than I anticipated. I have a theory, not yet sufficiently proved, that if one can only keep *S. longifolia* well watered during the dry windy period which we usually experience in early spring, that the plant is not nearly so likely to flower prematurely.

I have plants of *S. longifolia* growing in close proximity to *S. squarrosa* and *S. tirolensis*, both of which I find must have water at this time of year, and the plants of *S. longifolia* benefit from the watering their neighbours receive and have gone on growing, whereas other plants of *S. longifolia* planted in similar places but not receiving spring waterings have nearly all flowered while of quite small size. It is possible that in their home in the Pyrenees the water from the melting snows keeps them moist during the growing season, while over here for lack of sufficient moisture at that period they rush into flower. Anyhow the experiment is worth trying carefully by those who wish to retain their rosettes of *S. longifolia* as long as possible.

M. HORNIBROOK.

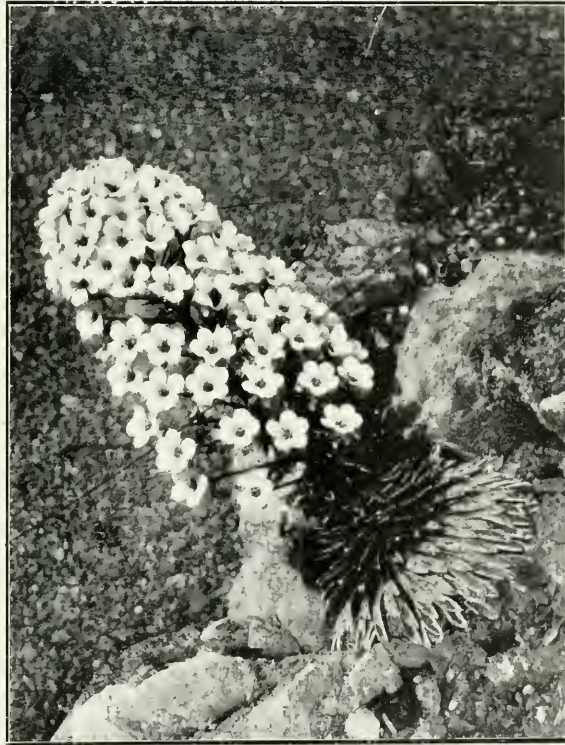


Photo by]

SAXIFRAGA LONGIFOLIA

(M. Hornibrook.



ANCHUSA MYOSOTIFLORA.

IN the front of a choice border or on the rockery this excellent perennial should find a place. It is a well-named plant, for the flowers are very similar to the *Myosotis*, and have the true Forget-me-Not blue, always a welcome colour in the garden. Throughout April and well into May leafy shoots a foot high are produced, which carry graceful branching sprays of small blue flowers. No difficulty should be found in its culture given good ordinary soil it will thrive in full sun, or even partial shade, and may be easily increased by cuttings or small bits taken off the parent plant. If given a too shady place, large coarse leaves are produced, but very few flowers.

Hints to Novices.

By R. M. POLLOCK.

DURING this month cuttings can be put in of a great many garden plants, as well as trees, shrubs and roses. Such plants as Pentstemons, Pansies, Violas, Alyssum, Pinks and Carnations, if not already done, can all be propagated by cuttings, and put into a shady border, well firmed into the ground and a hand light, cap glass or cloche put over them until they are rooted. Water if necessary, but where the soil was well moistened before the operation began water will not be needed for a day or so. If the Pentstemons have not got suitable growth for making cuttings of—that is to say, if strong, short, healthy side shoots have not been given off freely, cut a few plants back, taking out all flowering shoots, and before very long, nice strong growths will come away, which will make suitable cuttings before the end of the month. The hand lights, cap glasses or cloches will have to be shaded, so as to keep the bright sun off the cuttings. Almost any form of covering will do—old nets, old matting, or even paper will answer the purpose, but nothing looks as neat and tidy as a thin coating of white-wash put on the inside of the glass. This can be easily washed off when shading is no longer necessary.

In the case of shrub cuttings, they should be of the well ripened wood of this year's growth, and they will be much more certain to root if they are pulled gently off the main branch, bringing with each cutting what is called a "heel"—that is, a small portion of the old wood. There is another form of cutting known as "Irish cutting," which can often be got from plants which send up growths from the base below the soil level, and these are certain to root, because they are pulled from the base of the plant with a few roots already attached.

Where annuals have gone out of flower they should be removed at once, as they look untidy and the seed is of little use, as seed so saved cannot be relied on. It is better and more satisfactory to buy fresh reliable seed each year. Those who sowed a late batch of annuals will now find what an advantage they are in keeping up the succession of colour in borders.

If the dry weather continues water thoroughly, and where possible give liquid manure to shrubs growing on shallow light soil. Roses will also greatly benefit by this, and the climbing section—Wichurianas and Ramblers—should not be stinted, as it is on the wood these make this season that the flowers will come for next year's display, therefore the stronger and the more numerous the shoots made the better, and these can only be had if the plants are well nourished.

Biennials sown in the open or in pans may be pricked out, such as Sweet Williams, Canterbury Bells, Wallflowers, &c.

The annual Delphiniums, Candytufts, Cheiranthus Allioni, Clarkia, &c., may be sown in the open ground for flowering in the summer. This saves all handling, such as pricking into boxes or pans and protecting during the winter. Sown direct in good ground they will only require thinning, or pricking out into their flowering quarters, if they cannot be sown there direct. Those who prefer and who have the means of sowing indoors need not do so for another month, when directions will be given.

DAHLIAS.—More shoots will come from these than are necessary, and the weaker ones should

be removed altogether. Those remaining should be carefully staked, and the stake must be strong enough to support the heavy flowers and the large strong foliage. Watch the plants carefully for earwigs and other insects.

Lavender may be cut and dried either in the sun or in a warm room. Loosen the bunches and lay them flat on a sheet of cardboard or paper. Never dry Lavender in tight bunches: if this is done only the outside dries, and the inside gets musty and is of no use.

Some of the first flowering spring bulbs may now be planted; these include The Crown Imperial (*Fritillaria imperialis*); of this there are two colours, a clear, beautiful yellow and a very nice terra-cotta. They grow from two to three feet high, and should therefore be kept about half way back in a border. *Fritillaria Meleagris*, the "Snake's Head," of which there are several colours, is also useful, and the white variety planted with deep red *Polyanthus* makes a very nice combination. The Grape Hyacinth *Muscari Heavenly Blue* is a beautiful sight when seen near anything white. The Winter Aconite (*Eranthis hyemalis*), yellow, and only three inches or so high, is another spring flower which should not be omitted.

Violets that were planted in April should now wait for water. Neglect in this quarter now will mean weak plants and poor flowers in the winter and spring.

GREENHOUSE.—Towards the middle of the month the first potting of Freesias and Roman Hyacinths should take place. If not already purchased, an order for these bulbs should be placed immediately with the bulb merchant, so as to ensure getting good bulbs, and not only the refuse after others have had their pick. From ten to twelve Freesia bulbs will be sufficient to place in a 5 or 6-inch pot. When potted they should be placed in a cold frame, and when they have made an inch or more growth they can be removed to the greenhouse. The Roman Hyacinth bulbs being larger, fewer of them will be required to a pot.

Mignonette makes one of the most delightful pot plants that could be grown. This may be sown now in the pot in which it is to flower. It is a bad subject for transplanting, and it is better to sow thinly, and when the seedlings are fit to handle to thin out to two or three plants in a 6-inch pot.

Cinerarias, Calceolarias and Primulas raised from seed will be ready for a pot, keep them cool and moist, and attend carefully to watering.

August is the gardener's holiday, therefore, hints are short. If the weather keeps fine the garden will need little care save watering, and those on holiday will enjoy themselves the more.

An Englishman's Visit to some Irish Gardens.

"GOD ALMIGHTY first planted a garden," as Lord Bacon said, and it now seems certain to me that He must have fashioned that part of His garden which we call Ireland with the care that comes of special love. An invitation to spend a fortnight in paying visits to some of the Irish demesnes that are most celebrated for their collections of trees and shrubs and plants had been eagerly accepted, but I did not know that I was going to pass through a land so fair, that I should come to look upon the pleasure given by its

private gardens as almost secondary to that of the great garden which every wayfarer may enjoy. Our motor-car took us a journey of some 1,400 miles. Its way was over a vast green lawn, planted with rich woods, and musical with the murmur of a thousand streams; by the shores of enchanted lakes and summer seas: over mountains, where every glen and every summit was a romance. Why should we set out for some garden fifty miles away, I sometimes thought, to see a flaunting *Embothrium*, a well-grown *Pinus Montezumæ*, a rare "moraine," when, close at hand, we could drive through such avenues of glowing gorse, measure the magnificence of such beeches and sycamores and silver firs, or fall down in worship before the violet veil with which *Pinguicula grandiflora* decorates the grey crags and the brown slopes of the south-western mountains! But I have not been asked to sing the praises of Ireland—I am only to put down some of the impressions made by a few of the famous gardens on one who is no expert, but has this claim to write about gardens—that he loves them.

I had the good fortune to spend three weeks of this spring, in the company of an eminent botanist at Monserrat, near Cintra, where the late Sir Francis Cook formed so remarkable a collection of rare trees and shrubs: and on my return I paid visits to such notable English gardens as Abbotsbury, Warley Place, Leonardslee, South Lodge, and Nymans. The interest of the visit to Ireland lay, therefore, not so much in the expectation of seeing new plants as in seeing to what state of growth Ireland could bring those already known. Was it not Portugal over again when I was walking among the giant *Rhododendrons* of Muckross, under the *Eucalyptus* and through the Bamboos and the *Pieris* of lovely Derreen, among the *Leptospermums*, *Eugenias*, *Melaleucas* (both *lateritia* and *hypericifolia*), *Callistemons*, *Aristotelias*, *Olearias*, and *Agonis* of Ross-dohan? Monserrat had been scarlet with *Tacsonia ignea*, blue with *Wigandia*, white with *Exochorda*, yellow with *Edwardsia grandiflora*: but what of the scarlet of the *Embothrium coccineum* at Fota and Kilmaccurragh and elsewhere, of *Crinodendron* and *Clianthus* at Bantry, the blue of *Ceanothus* trees in many places, the white of *Drimys* and *Abutilon vitifolium*? and did we not see flourishing trees of the *Edwardsia* in full bloom in at least three gardens? Could we be still in Great Britain, we asked, when led up to the avenue of *Dracæna* and *Chamaerops* at Fota, or allowed to measure a leaf of *Gunnera manicata* at Garnish, which proved to be nine feet across?

It was satisfactory indeed to find that, after all, there was no need to make comparisons between the Portuguese, the English, and the Irish gardens: for the latter not only show a truly astonishing collection of rare and tender varieties, but show them, for the most part, so finely grown, that the visitor's perpetual delight and surprise left no room for the institution of comparisons. And further, it seemed idle to compare one Irish garden with another, for each had its own special beauty, its own supremacy in some direction. Kilmaccurragh and Fota stood out, it is true, by reason of the splendid growth and the rarity of their trees, but what could be more absorbing than the variety of plants seen at Dr. Heard's, at Lord Dunraven's, and Mr. Beamish's? Beauty of garden scenery, too, must be taken into account; and has earth fairer spots than

Muckross, Killarney House, or Derreen. As an example of the arrangement of colour that shall enhance the natural charm of a lovely piece of ground, could anything be more successful than Mr. Bence-Jones' planning at Lisselan? Long shall we remember those banks of varied *Cytisus* and *Deutzia* and *Tritoma*, &c.: those thickets of *Myrtles* and *Abutilon*; those tender groupings of *Phlox Laphami*, and all sloping to the sparkling river, edged with an unending glory of *Primula*, *Narcissus*, *Trollius* and *Iris*. And at Ashbourne, when our minds were almost weary with the excitement of rarity, a triumph over difficulty—*Pinus canariensis* in sturdy health, and *Pinus palustris*, *Beschorneria yuccoides* in full flower, *Rubus flagelliformis*, *Actinidia Kolomieta*, *Puya mexicana*, *Ilexia polycarpa*, *Corylus tibetica*, and a hundred other treasures—what could be more refreshing than the effect of Mr. Beamish's cliff garden? Not that rarity and difficulty were absent there, but the charm of the beautiful pictures presented overcame any technical consideration of the art which had produced them.

Having so greatly enjoyed such a wealth of uncommon and tender specimens in these wonderful gardens—splendid specimens of plants which the gardens of Sussex, for instance, can only show us as delicate babes—it may seem ungrateful to say that I did notice with surprise the absence of fine examples of certain things which I had taken for granted I should see. *Clethra arborea*, the beautiful *Styrax obassia*, *Exochorda Alberti*, *Euonymus fimbriatus*, *Franciscæa*, *Corynocarpus lævigata*, *Griselinia lucida*, *Erythrina erista-galli* and *corallina*, *Justicia carnea*, *Hibiscus*, should not these be found flourishing if due care be taken of them, in those favoured, sheltered gardens. Then the *Magnolias*: there were fine specimens of magnificent *M. Campbellii* at Fota and Kilmaccurragh, but not such trees of *M. conspicua*, *Soulangeana*, *Watsoni*, *hypoleuca*, as I had hoped to see, and *M. fuscata* did not seem to be tried. Nor were there large plants of some of the *Viburnums plicatum*, *macrocephalum* and *Awatuki*. The variety of *Rhododendrons* at Kilmaccurragh would be exceptional anywhere, unless, perhaps, at Derreen: the gardens of the south-west did not show very many of the finer species, nor yet of the remarkable hybrids that have been raised in recent years.

My tour came profitably and pleasantly to an end at an inland garden—beautiful Headfort—whose daring owner, not content with the possession of some of the finest old trees in Ireland, has embarked on the planting of a collection of *Conifers* and flowering shrubs which if they succeed, as they should, will bring many pilgrims to County Meath in the near future, so complete and growing is it to be. Finally, there was a brief, crowded, but glorious two hours at Glasnevin, where I should like to have spent several weeks. But, indeed, the fragmentary nature of these notes will have shown their readers that the hours spent in these rare gardens were all too short. Much must have been left unnoticed in the hurried walk from wonder to wonder. Writing these lines as I do in a beautiful garden at Aix les Bains, before starting to see the Alpine darlings of Dauphiné and the Mont Cenis, I am sorely conscious that I have done no sort of justice to my theme, nor to my own intense enjoyment of my Irish visit. I beg my kind hosts and my readers to be indulgent—to forgive.

C. W. J.

Streptocarpus.

WHAT a wonderful advance has been made in these flowers during recent years! Now, if one buys seeds of the best strains the reward will be flowers of perfect shape, almost 3 inches across, varying in colour from white-blue to red. They will flower all the summer, but from August onwards they are particularly valuable. Formerly they were treated on similar lines to the *Gloxinias*, but they will thrive far better with less heat, the plants will be stronger, and the flowering season more prolonged. The seed may be sown almost any time. To have plants to flower in August sow the seeds about February, and when the plants get sturdy grow on in a cool house, where frost is excluded, similar to tuberous *Begonias*. Any ordinary potting compost will suit them, and good decorative plants may be grown in 5 or 6 inch pots. Every two or three years it is best to raise a fresh batch of seedlings, as young plants are more vigorous than the old ones. If a specially good form crops up among the seedlings it may be perpetuated by cutting off some leaves and placing them in cocoa-nut fibre in a propagating frame, where they soon form fresh plants.

Begonia mite is their worst enemy, but this may be exterminated by frequent applications of soft soap, tobacco water and sulphur.

Where many other flowering plants will fail for want of light, the *Streptocarpus* will luxuriate, and as edgings to beds or planted on a rockery under glass these plants will give a long season of bloom.

Several species have played a part in producing the present race of *Streptocarpus*. From *S. Dunni*, a native of the Transvaal, the red colour comes; the white is obtained from *S. parvillorus*, and the blue colour comes from *S. Rexii*.

Lachenalias.

AUGUST is a good time to re-pot or to make a start with these South African bulbous plants. These greenhouse subjects are most welcome in early spring for decoration, do not require much fire heat, and are very easy to grow. From 6 to 10 bulbs may be planted in a 5-inch pot, using a compost of two parts loam, one part leaf-mould, and old dry cow manure, with a sprinkling of bonemeal and plenty of sand. Small bulbs may be planted fairly thick in pans to grow on for stock.

A very beautiful effect may be obtained by planting *Lachenalias* in wire hanging-baskets. Baskets about a foot across should be lined with sphagnum and fibrous loam and the bulbs planted when filling in the basket. When given good soil they will last for two years. After potting or planting, they may be placed in a cold frame close to the glass and given plenty of air, but very little water, just enough to keep the soil moist until the leaves are made. About the end of October, before frost occurs, the plants should be moved to a cool sunny greenhouse where the temperature does not fall below 15°. *Lachenalias* like abundance of sunshine, but too much fire-heat is detrimental.

Weak liquid manure may be given to vigorous plants in full growth until the leaves show signs of fading. About May the plants may be placed in a frame again and be kept quite dry after the foliage has withered, so as to give them a rest until August comes again.

Some useful sorts are *L. aurea*, *Nelsoni*, *pendula* and *tricolor*.

The Month's Work.

The Flower Garden.

By J. H. CUMMING, Royal Dublin Society, Ballsbridge.



GENERAL REMARKS.—August will reveal to the flower gardener the results of his previous forethought, planning and planting. His success or failure will be apparent to all who see his beds and borders, and he is wise who thus profits by this month's critical inspection of his own and other people's summer display. Visiting and comparing notes with other gardeners is time well spent, and no class are so ready to help each other with hints that lead to success in growing some particular subject. Might I give a hint to employers who may read these notes that reasonable facilities given to their gardeners to see what others are doing reflects back again, in increased efficiency and in keeping up-to-date in the ever-changing fashion that takes place, even in gardening.

PROPAGATION.—We are again at the period of the year when the propagation of tender bedding plants to keep over the winter must begin. The summer may now be classed as a dry one. Bedding has not made, in most places, sufficient growth to cover the ground, consequently cuttings of *Pelargoniums* will be scarce. These should first be taken in hand and cuttings removed carefully to avoid mutilating the plants. A few taken at intervals as growth proceeds are seldom missed, and by beginning thus early a longer season to take cuttings is insured. *Pelargoniums* are often struck in the open border and potted or boxed up early in October. This is an excellent plan if all is attended to at the right time; but I have seen this system prove disastrous to the grower through an early frost destroying the lot. An alternative is to strike in boxes 2½ feet by 1½ feet. Use soil made up of equal parts of loam, leaf-mould and sand, and put all through a ½-inch sieve. The rougher parts may be put at the bottom of the boxes. After the cuttings are put in give a good watering, then place alongside a walk, or some such place, where they can get all the sun possible.

Such things as *Calceolarias*, *Pen stemons*, *Antirrhinums*, or any soft-wooded subject will do to put in cool frames towards the end of the month. The great thing is to get this class of bedding struck early and hardened to the air before the trials of winter come on. The ease by which *Antirrhinums* may be raised by cuttings or seed makes them more popular each year. The improvement from the old fashioned Snapdragon encouraged growers to bed them more extensively. They stand drought so well and flower for such a length of time. This year the long border in the People's Gardens, Phoenix

Park, is given over almost entirely to them in lines of different colours, and a charming feature they are making. The range of colours affords ample choice to please anyone, and a selection can be noted for future use. Cuttings put in now make excellent stuff for early spring planting, and they generally keep more uniform in height than seedlings.

HELIANTHEMUMS.—I have been impressed for the past few weeks by seeing the persistent flowering of the Sun Rose. It opens its flowers in sunshine and closes at night, or in dull weather. In several rock gardens I have visited lately it was a special feature. The flowers are produced in such profusion that the plants are a sheet of bloom of various colours nearly all summer. It is surpassed by no other for modest beauty and grace when trailing over stones and banks. Also planted near the front of the herbaceous border, a patch of it will furnish a pleasant surprise. Cuttings of half-ripened growth strike readily in sandy soil. Put in now in a cold frame for planting out early next spring.

CARNATIONS.—The advice on propagation by layering has been repeatedly given in these columns. I need not repeat it, but simply urge those who would be successful to begin layering at once. The work done early means strong-rooted plants that may go into their permanent quarters early in October if the district is not a wet one. Otherwise plant the layers on a dry sheltered border till next March, then plant out where they are to flower. The soil to use in layering should consist of old potting soil, leaf-mould and sand. See that it is gritty and sharp, as the layers root readily into material of this kind.

CLIMBERS ON WALLS.—As soon as Climbing or Rambling Roses have ceased to bloom, cut out the growths which have flowered, and make the new strong growths secure from harm by loosely tying them into position. The rapidity with which soil at the foot of a wall dries up is not generally comprehended, and the reason why so many beautiful climbing plants are more or less a failure and become infested with insect pests, instead of being a delight, is that they need moisture at the roots when developing leaves and flowers. A thorough soaking at the roots and a vigorous hosing or syringing overhead now will mean the salvation of many a plant close to a wall.

HANGING BASKETS as a rule are not sufficiently watered. Being up out of the way is often the excuse for passing them over when in a hurry. It simplifies matters greatly if a piece of sash cord is attached to the wire-ring from which the basket hangs, and the cord is passed over a pulley wheel, then it becomes an easy matter to lower the basket down to be watered, removing dead leaves, or tying a growth here and there.

EARLY BULBS.—For those who require early Roman Hyacinths and Freesias in flower by November, secure bulbs and pot up at once. The bulbs do not stand long exposure to the air. Cover the pots with ashes or any light material till an inch of growth appears above the bulb, then remove to a frame, and from there in a couple of weeks' time to the greenhouse. Too rapid forcing induces the leaves to grow before the flower spikes have time to develop.

The Fruit Garden.

By D. MCINTOSH, Gardener to Alderman Bewley, Danum, Rathgar.

VINERIES.—In houses where grapes are ripe it is advisable to shade the bunches from brilliant sunshine in order to retain the colour of the berries. Whitewashing the glass on the outside will answer the purpose and help to keep the berries from shrivelling. Admit abundance of air when the outside conditions are favourable, but on dull, sunless days a little warmth in the pipes will be found essential to exclude dampness, a stagnant atmosphere being fatal to ripe grapes. Later vines, with their fruit swelling rapidly, should have the borders damped down frequently in bright weather. Attend to the pinching of sub-laterals every few days, so that all the nutriment possible will be forced into the bunches. Liquid or artificial manures, when applied to the borders at this stage, will give excellent results. Mulch the surface with three inches of good horse manure. Sponge or brush the leaves on the first indication of red spider, using sulphur and soft soap diluted in water. Remove pot vines outdoors to a position where they will receive the full advantage of air and sunshine to ripen their growth. Spread some litter around the pots and make them secure against strong winds.

PEACHES AND NECTARINES.—These fruits, in a cool house, having commenced to swell up quickly, should be gradually inured to more light and sunshine. By so doing, most varieties obtain a beautiful colour and the flavour is much improved. Care, however, must be taken that the fruits are not too suddenly exposed to strong sunshine, or scalding will be the unpleasant result. Keep the borders well supplied with water until signs of ripening are visible. As soon as the first fruit is ripe, the trees should be gone over once or twice every day to examine the others. Handle the fruits very carefully and set them in a box or basket lined with cotton wool. They are so easily damaged that the least bruise will leave its mark. When the crop is finished do not fail to give the tree a good syringing with the garden engine, and if any signs of weakness are shown, give several doses of weak liquid manure throughout the autumn to strengthen and plump up the buds for the following season. Out-door peaches will also require close attention as to watering, feeding, tying in, and regulating of the current year's growth. Gross-growing shoots and others that are crowded and not likely to ripen satisfactorily should be cut clean away.

POT FRUIT TREES.—Many of the trees which were set outside in June and July will be bearing fruits approaching maturity. These fruits should also possess a highly-coloured appearance, be of fine size and good shape. Examine them at frequent intervals to see that they are still safe against rough winds, because there is always a danger of their falling off and being damaged. As the trees become deprived of their fruits when ripe, keep the foliage healthy and clean by occasional syringing. Feeding and watering should still be continued, gradually reducing these applications as the season advances.

HARDY FRUITS.—Where it is desired to prepare well finished fruit for table use or show purposes

constant attention must be given those fruits from now onwards. Very often they are shaded by foliage, and consequently do not receive the requisite amount of light, air and sunshine. It is not good policy to pick off too many leaves in order to expose the fruit, rather tie them back loosely with a piece of raffia. The leaves are required to assist in the development of the buds for the following year. Trees that are growing on a wall facing south must not be allowed to suffer for want of water. In this position the roots dry up quickly and the fruits will not swell as they ought to do. Heavy crops on bush trees must be kept well supplied with water and feeding. On apples, pears and plums continue to pinch out the points of all laterals and sub-laterals as soon as they make a few leaves; also the vigorous-growing leaders a week later. Cut out the old canes of raspberries when the picking of the fruit has ceased, and encourage the young growths as much as possible by giving frequent applications of farmyard liquid manure. Strawberries will need immediate attention whenever the nets are removed. If intended to remain for another year's crop, commence by cutting away all runners, pulling up weeds, and removing dead and decaying leaves. The old mulching should be cleaned up and taken away, afterwards breaking up the surface soil between the rows with a Dutch hoe.

The Vegetable Garden.

By J. G. TONER, County Instructor in Horticulture, Co. Monaghan.

TRIPOLI ONIONS.—Owing to the uncertainty of the weather a second sowing of Tripoli onion might be made early in this month. The last week or so of July and up to the middle of August is the period wherein the two sowings should be made. In the event of a severe winter the earlier plants will usually come through quite safely, while the younger lot fails. But, on the other hand, a mild soft winter will often cause the strong early plants to "bolt"—that is, throw up flower stems. It is here that the late batch comes to the rescue and gives a good crop. Ground fairly firm, but not very rich, is what they like. The seeds may be sown broadcast or in rows, and covered about half an inch deep.

BRUSSELS SPROUTS.—The first crop for next year is ensured by sowing seeds of these during the month. Usually the middle weeks are selected. They are hugely benefited by being pricked out at a good distance apart—say six inches—so that stout growth will be made and safety afforded from heavy frosts.

CAULIFLOWERS.—From the middle to the end of the month such kinds as Early London should be sown. Heads will be formed probably during the month of July next year. Protection of some kind is generally afforded during winter, for a smart frost will completely cripple them. Generous treatment, such as is necessary when they are finally planted out in spring, will not suit now; ordinary soil without any enrichment will do right enough.

CELERY.—Rows that were strong, healthy, and growing vigorously and freely are often spoilt by careless moulding. It should, of course, be done by degrees. Four inches or so of soil is quite

enough to use at any one operation, but beforehand care should be taken to break it as fine as possible, and if soot be handy to dust some over it. The side shoots, if there are any, are removed entirely, then the leaf-stalks worked gently into their proper places and arranged in such a manner that they completely surround and protect the heart of the plant. When only one person is engaged at the job light ties ought to be put on, so that the stalks will be held in position while the moulding is being done. Whether there is any suspicion of dryness or not, water in very liberal quantity should be given a day beforehand, followed by liquid manure or a top-dressing of artificials. Of the latter superphosphate four parts and nitrate of soda one part will have a good effect. Use a small handful to the yard of row, giving it equally on either side. These must not be mixed until they are about to be used.

LETTUCE.—Sow seeds of All-the-Year-Round cabbage lettuce, and also some of the White Cos to make assurance doubly sure. Inexperienced gardeners do not always recognise the necessity of looking so far ahead as next spring and early summer, simply because there is plenty of vegetables to hand just now. There, however, are scarce times, and provision for them must be made. Lettuce seeds germinate very quickly and surely, therefore take care to sow quite thinly.

TURNIPS.—These may be sown again, and the varieties mentioned last month are sure to please. Earlier crops will require thinning, and in respect to winter especially it should be promptly done.

TOMATOES.—When they have set a fair crop they will stand a very liberal course of feeding. Outside plants that have set three trusses of fruit may be "stopped"—that is, the growing points of the plants removed at one joint above the last truss. Side shoots must be also removed as they show. This has not been an ideal season for them, but, thank goodness! it is not so bad as last year. Plants under glass require very constant attention to the regulation of the growth. The knowing ones confine their plants to a single stem, and it pays them too. Plenty of water must be afforded if they are in pots or boxes, for they are thirsty subjects. All possible air too is demanded; close and moist conditions lead to disease and disappointment.

GREEN CROPS.—All kinds of green crops can be planted out after early potatoes, peas, &c. Ground in good heart will hardly require any manure. Yet hungry ground cannot be expected to yield a good return; but ordinary good garden ground that was well prepared for early potatoes, for instance, will be in proper fettle for spring cabbages, sowing onion seeds and so on.

SOWING CABBAGE SEEDS.—Those sown last month are expected and intended to give an early cutting, or, better still, pulling in spring. The cabbage consumed in spring, however, will not be available later. So seeds are got in during this month also, and the resulting plants put out during autumn or spring, when a nice succession is formed.

PARSLEY.—Where a small supply is in constant demand some strong young plants might with great advantage be potted up. They can be grown almost anywhere, and fill in an excellent manner the place of ferns in the dwellinghouse.

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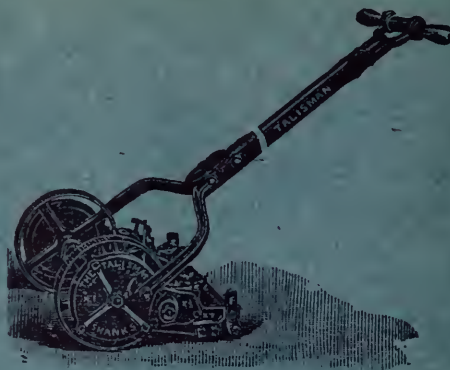
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EDITED BY C. F. BALL.

Bedding Roses.

By DR. O'DONEL BROWNE.

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GARDEN.

In all the articles which have appeared from time to time in this paper I cannot recall any article on the subject of "Bedding Roses." Nothing makes or mars a garden more than beds filled with Roses. Given a good selection of

Roses, plant them in the proper way and you may look for success, but unless you do the thing in a proper way it is only labour lost. Now let us see what are the requirements. Firstly, be sure to see that your beds are properly dug and prepared. Beds can be of any shape, but it is advisable to have them so that they are easy of access

and not so wide that one must walk on them to get at the flowers. The best kind of bed is in shape a parallelogram, as long as you like, but not wider than five feet. This will allow you several rows of Rose trees, the question of spacing out between each tree must be governed by the variety you intend planting. Strong growers of course require more elbow

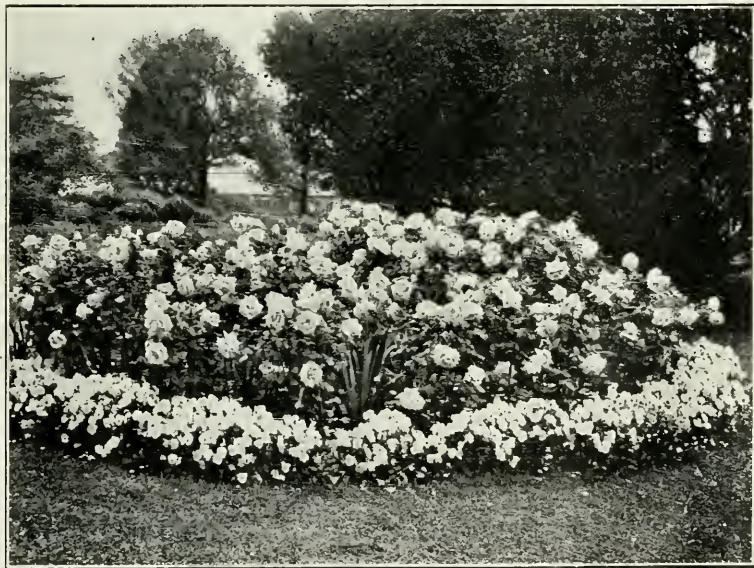
room. It is a good plan to only put one variety in each bed; colour, growth and evenness of flowering are more uniform by this method. Get your beds prepared carefully early in September, and send your order to your nurseryman and,

if you like, give him the dimensions of the beds, so that he may judge how many trees to send you. The great mistake I see most people make is to plant too few in a bed. Roses to furnish a bed should be put in closely, not smothering one another, but near enough to furnish all the bed. Let them be

pruned very

hard in the following spring, and let all cultural care be given them.

Now, we must say a few words about the varieties. Of late years, owing to the increasing amount of hybridizing, varieties have increased enormously and also so have the schemes of different forms. By this I mean that bedding Roses are all varieties now from the single to



A BED OF LA FRANCE.
Edged with Viola Chieftain.

the very double. If we are to define a bedding variety it must be one which has a good habit of growth—good, free and continuous bloomer, and if possible one which has a definite colour and not particularly subject to diseases. Choose any Rose you like, be it single or double, but be sure that it meets these requirements if you want success. Try and keep the taller varieties, such as Hugh Dickson, Frau. K. Druschki, where they can tower over the smaller growers when planting a Rose garden; by this I mean that these taller varieties should be nearer the outside boundaries of your plot. Do not put two Roses near one another in two beds without considering the colour question lest they clash and mar one another. If single Roses be your quest you will find many varieties which are perfect, foremost amongst them being Irish Elegance. This Rose, coupled with Fireflame, Glory, Modesty, Engineer, will give you a great contrast and wealth of colour. Simplicity is of a larger size than the others, but it is indispensable as a single. Of semi-double varieties one can plant La Tosca, Killarney, Gustav Regis, Cynthia Forde and any others that fancy dictates. Of the double varieties their name is legion. Good colours can easily be got in any shade from dark crimson to pure white. Of the dark varieties the best are George Dickson, Hugh Dickson, Rhea Reid, Liberty, Laurent Carle, Senateur Vaisse, Captain Hayward, George C. Waud, W. E. Lippiatt. In pinks we have good varieties in La France, Killarney, Mrs. John Laing, Mme. Jules Grolez, Pharisaër, Mme. Abel Chatenay, Dean Hole. Buff varieties can be represented in Mrs. Charles Allen, Carine, Melaine Souper; yellows with Harry Kirk, Mme. Ravary, Mons. Joseph Hill, Mrs. Peter Blair, Miss Alice de Rothschild; and whites with Druschki, White Maman Cochet, Souv. de S. A. Prince, Mrs. Myles Kennedy, Comtesse de Saxe, Wm. R. Smyth. This is by no means a perfect list, the names are those which have come first to my pen. Some surprise may be caused by not having mentioned Lyon-Rose, but I cannot honestly advise it. With me it is all right as a maiden, but as a cutback it is not good.

I advised you to prune all varieties hard the first year of planting; in future years you can spare the knife, but on no account allow your plants to get "leggy." Some old wood should be removed each year. Pegging down some varieties, such as Hugh Dickson, is another good plan but you must not be too greedy and peg too many rods. Nothing looks finer than a well-furnished bed with a profusion of flowers and clean foliage; laziness begets dirty beds and flowers which are an abomination. If you are going to do the thing, do it well.

Sowing Annuals in Autumn.

This practice has been long and often recommended, but still only a few people, especially amateurs, seem to have realised the immense advantage of it. Of course, not all annuals are suitable for autumn sowing, but those that do prove amenable are incomparably superior the next summer to those sown in spring. There are, of course, risks and difficulties, especially where the seeds are sown in the open ground, and cultivation has to be done entirely in the open. The chances of extraordinarily severe weather or prolonged spells of cold rain all contribute to try very severely the young plants in their tender stages.

Given, however, a fairly sheltered spot which will get a fair amount of sun in winter and a light soil which will be warm, success is fairly certain. It is not always practicable to sow the seeds where the plants are required to flower, for the simple reason that the beds and borders where we want the annuals next season are generally full of plants when the seeds should be sown—viz., in September.

The next best plan is to sow the seeds thinly in shallow drills on a sheltered, warm border, and by the time they are large enough to handle it may be possible to lift and prick them out where they are required to flower. If, however, the flower border should be rather exposed or the soil be inclined to be heavy it will be better to defer transplanting till the first fine weather in the following spring. Should some of the seedlings grow too fast and get crowded in autumn they may be lifted and pricked out in the same border and moved again in spring, when they will be nice sturdy plants. In very small gardens it is generally impossible to devote much ground to the raising of seedlings for transplanting, in which case a few small shallow boxes might be used. A layer of drainage must be placed in the bottom, and over this a couple of inches of fine sandy soil pressed moderately firm and made quite smooth on top. The seeds should then be scattered thinly over covering lightly with a little more fine soil gently pressed down with any flat article. One or more kinds may be sown, according to the size of the box, taking care to leave a division between each. In this way a great many sorts may be grown in quite a small space. The seedlings, when they are large enough, may be pricked out where they are to flower or into other boxes and kept in a sheltered spot till spring.

Where a cold frame is available the seeds may be sown a month later, say in October, in pots or boxes, and simply stood in the frame, giving plenty of air at all times except during very frosty weather. Here the seeds will germinate

and grow slowly, as the temperature is by then getting lower, but as the days lengthen in the new year and the sun gains strength they may be pricked out into boxes of sandy soil, keeping the frame shut for a week or more and during cold weather till the seedlings are established. Afterwards give plenty of air when fine, but avoid cold draughts, as, of course, having been in the frame all winter the young plants have become more tender than if raised entirely in the open. By mid-April they will be strong and sturdy, ready to go out to the border.

Some may be inclined to doubt whether it is worth while sowing in autumn when fine displays are possible from spring sowing. There is one manifest advantage anyway, and that is in the earliness of flowering. Obviously the autumn sown plants have a very considerable start over those sown in spring. Having already developed a root system which soon gets away into the soil as spring advances, the plants are better able to withstand drought than the tiny seedlings struggling through the soil in early spring with the chance of a dry period to face in May. Moreover, it will be found that the autumn sown plants, by virtue of their stronger roots, will continue flowering over a much longer period, in fact some of the Clarkias, Godetias, &c., sown here in a cold frame last autumn are still flowering in August practically as well as those sown in the open in spring.

Precisely which kinds should be sown in autumn is largely a question for experiment by the individual concerned. Obviously different soils, aspects and localities will materially affect the results. No one can draw up an infallible list to suit every garden, and the best we can do is to recommend a few that have been found generally useful.

Alyssum maritimum is a neat little annual,

often sowing itself, coming up even in the walks; it grows only about 3 inches high and smothers itself in white flowers.

Brachycome iberidifolia, the Swan River Daisy, can be had in the three colours—rose, white and blue—and is useful for autumn sowing transplanting readily, but better with some protection in winter.

Scotch Marigolds, varieties of *Calendula officinalis* are showy and very hardy, easily raised outside. Good varieties are Meteor, orange and primrose; Orange King, deep orange; and Lemon Queen.

The annual Candytufts are hardy and effective, and may be sown where they are to flower or pricked out and transplanted in spring. Good kinds are Rose Cardinal, Dunnetti, crimson; and white spiral or giant hyacinth-flowered white.

The annual Chrysanthemums are now much sought after, and prove very useful for early work. The coronarium varieties are strong growers, inclined to coarseness, and are not recommended for autumn sowing. The varieties of *C. carinatum* are better, growing about 18 inches high and producing abundance of prettily coloured



THE STOCK-FLOWERED LARKSPUR.

Lavatera rosea splendens and *Love-in-a-Mist*.

flowers. A new race, represented by *C. Evening Star*, *Morning Star* and *Northern Star*, is a decided acquisition, giving larger flowers of pleasant colours and flowering over a long period; in the order named the colours are golden yellow, primrose and white respectively. The improved forms of the Corn Marigold, *C. segetum*, are also of much merit, in appearance resembling the Star class. The blue Cornflower is first-rate for autumn sowing, and gives fine material for early cutting. The white and rose coloured varieties are not so satisfactory. A very useful and hardy annual is *Collinsia bicolor*, which produces lilac and white flowers very early from autumn

sown seeds. There is also a pure white variety.

Some of the annual *Coreopsis* are worth a trial, the fine golden yellow and dark crimson-maroon flowers are so effective. They are better of protection in winter however.

Eschscholtzia californica, a showy annual, will sometimes sow itself and come up in spring,

making a fine show through the summer. There are numerous varieties now on offer, but perhaps the best for all purposes is Mandarin, a fine deep orange colour. *Godetias* are excellent for autumn sowing, and form handsome bushes the following summer, flowering for months. Some of the best varieties are Bridesmaid, white with rose blotches; Schamini fl. pl., an elegant double bright rose variety, of great value for cutting; Duchess of Albany, large white flowers; Lady Athemarle, bright crimson;

Marchioness of Salisbury, rose crimson with white margins; and Sunset, a most delightful glowing crimson of rare effect.

The *Clarkias*, too, cannot be omitted, their light elegant spikes of charmingly tinted flowers being effective either cut or in a group. The various varieties of *C. elegans* are about the best, and give a fine range of colour. *C. Carmine Queen*, *Chamois Queen*, *Vesuvius*, an orange-scarlet. *Salmon Queen* and *Pure White* are about the cream.

The annual *Larkspurs*, too, are indispensable, and lend themselves to very effective use in the garden as well as being admirable for cutting.

The tall varieties are the more elegant and give better returns than the dwarf sorts. Carmine, scarlet, violet and white are the principal colours, and very beautiful they are when a group of six or eight plants are in full flower.

A very early flowering dwarf annual is *Limnanthes Douglasii*, which often sows itself and flowers freely very early in spring. It may

be sown in the autumn in the open with safety, and will cover itself with pale yellow flowers early in the year.

Another equally hardy is the little "Violet Cress," which sows itself freely and flowers as soon as the sun begins to get warm in very early spring. It is useful as a carpet for Crocuses and other early flowering bulbs, growing scarcely more than an inch in height and bearing numerous pale violet flowers.

One could go on to some length suggesting many other sorts which would doubt-

less succeed in many places, but, as stated earlier, something must be left to the individual.

Other kinds, for instance, which frequently do well are *Nigella Miss Jekyll*, a fine variety of "Love-in-a-Mist." Poppies, too, both the tall and the Shirley varieties, often do well sown where they may flower, as they are bad transplanters. The dwarf Soapwort *Saponaria calabrica* is a pretty rosy-pink annual flowering early. *Silene compacta* is also early and floriferous, while the most popular annual of all the Sweet Pea, will no doubt receive attention as to autumn sowing from the pen of a specialist.

B.



CANDYTUFT WHITE ROCKET.

By kind permission of Sir James W. Mackey, Ltd.

Gunneras.

FROM many climes and from the farthest corners of the earth plants are gathered to decorate our gardens, but of the hardy vegetation which succeeds in our isles there is nothing to compare with these giant Rhubarbs of South America. Although often called Rhubarbs they are more closely allied to such plants as the Mare's Tail (*Hippuris*) and the Water Star Wort belonging to the family Haloragaceæ.

The genus *Gunnera*, named after J. E. Gunnor, a Swedish botanist and bishop, includes about twelve species, from tiny little plants an inch or two high to giant herbs with umbrella-like leaves many feet across. The smallest one, usually grown in a rock garden, is *Gunnera dentata*, a native of New Zealand; it forms a mass of creeping stems with rounded leaves toothed at the edges. *G. magellanica* is a larger plant with leaves $1\frac{1}{2}$ to 2 inches across; in peaty soil it spreads freely by prostrate stems along the surface of the ground.

Of the giant *Gunneras* one was first introduced from Chili in 1849 as *G. scabra*, but is now known as *G. chilensis*. In a moist position, where a bold and handsome foliage plant is required, this is an extremely useful plant; the leaves, borne on reddish prickly stalks, have a diameter of 4 to 6 feet, and an established clump reaches 18 feet or more across. In Chili the natives use the stalks in the same way as we use Rhubarb, while the roots yield a black dye, and are also used for tanning leather. Mr. T. Smith, of Newry, sends out a larger form, known as *Gunnera scabra major*, while, if space is limited in the garden, *G. scabra nana* may represent the genus. This variety is a miniature of the type, and forms a cluster of crowns, but only grows $1\frac{1}{2}$ to 2 feet high.

The giant of the family is *Gunnera manicata*, introduced from the freezing regions of South Brazil. For parks or large gardens by the side of a pond or lake there is no other foliage plant which will give such a bold and striking effect.

Under good conditions and when given generous treatment this *Gunnera* will assume gigantic proportions. At Narrow Water, in Co. Down, a specimen with 27 leaves when measured gave a circumference of 122 feet, the leaves being over 9 feet from the ground level, and some of the individual leaves were over 8 feet across. This plant used to get an annual feed of a load or two of cow manure in early spring.

Although seen at their best when their huge leaves are hanging over water, yet they will grow quite well in any rich soil. Spring is the best time to plant, and if large specimens are desired large holes, 6 or 8 feet square, must be

made up with good soil and plenty of manure. When the leaves die down in autumn it is safer in the colder localities to tie some dry straw or bracken around the crowns, and then the whole may be covered by the old leaves. This will ensure some protection in spring, when the young leaves start to grow: late spring frosts will occasionally spoil the first leaves unless they are protected by a light covering.

When the plants become mature many crowns are formed, and these may be thinned out with advantage to those remaining.

The greenish flower spikes are more curious than beautiful, and unless seeds are required they are often cut away as soon as they form, to encourage the leaf growth.

In a young state *G. manicata* has a great resemblance to *G. scabra*, but may be recognised by the leaves being rounder in outline, broader at the base, and with almost whitish or light green veins; the leaves also remain green for a longer time in the autumn, which is a distinct advantage.

Hints to Novices.

By R. M. POLLOCK.

BEDDED out plants may be kept trim and tidy by occasional picking over and removing the old withered flowers and leaves. The plants should be left in the beds as long as possible, so as to keep the general appearance of the garden bright. Of course where the same beds have to be used for the spring display and for bulbs the summer stuff must be removed.

Early in the month cuttings may be taken of all *Geraniums*, *Calceolarias*, &c. These can be put into boxes or pots, and wintered in a cold frame or greenhouse. Boxes are far the cheapest, as these can be run up on the premises or may be bought, and they are not easily broken like the pots. Some of the popular bedding plants are raised each year from seed sown in the spring; these are *Lobelia*, *Verbena*, *Ageratum*, &c. *Calceolarias* are propagated by cuttings taken during this month and where possible put straight into a frame. As these are very liable to damp off, they should be carefully watched if the weather be damp. *Violas* can also be propagated by cuttings during this month. Take the cuttings after a good day's rain, and see that they are firmly dibbled in in prepared ground and well watered. Some form of covering might be put over them for the first fortnight or so, but once rooted they will not require any shelter. Old plants can also be increased by division, which can also be done now and the plants cut back.

All leaves, grass, and rubbish from the garden should be collected and put in a heap, where it will in time, if occasionally shaken up and turned, decay and form good mould for use in the garden. In small gardens, such as are attached to the numerous villas now being built, it is very difficult to find space for keeping this rubbish, or indeed for keeping soil or manure of

any kind. A good flowering shrub of a quick growing habit, a trellis work covered with Roses or Creepers, can be made to answer the purpose of an ugly hedge which would require to be clipped, and would always give a stiff appearance. Behind this shelter, whatever it may be, the necessities of the garden may be hidden.

AUTUMN BULBS.—Now is the time to notice where an extra bit of colour is wanted in the border, or where in a month's time colour will be scarce, and for these spaces there are many good autumn-flowering bulbous plants which come into full bloom when everything else is going to rest. Some of these could even be ordered at once and tried, but they will do better in succeeding years than they will the first year, and they also have the great advantage over many spring flowering bulbs in that they need not be lifted every year, and this operation would only be required when they had been a long time in one place and grown too close together. Among those which could be purchased immediately and would give some return this autumn are the Autumn Crocus *Colchicum autumnale* and varieties. *Colchicum speciosum* is a deep pinky mauve, with large blooms all well shaped and lasting well in flower both when growing or when cut. *C. speciosum album* is a very lovely thing with its pure white flowers. All these *Colchicums* should, where possible, be planted where they can come up through some low-growing plant, as they flower without their foliage, which appears later on. The "Autumn Snowflake" *Leucojum autumnale*, like a pretty little Snowdrop which flowers now and could be bought at once. A more beautiful autumn flower than the "Belladonna Lily" (*Amaryllis Belladonna*) could not be found, and when planted at the foot of a warm wall, with or close to some dark red foliage plant, its silvery pink flowers on tall reddish stems are quite perfect. The hardy *Cyclamen C. neapolitanum* also flowers in the autumn, but too early to be bought now for this season. The small pinkish flowers are often six or more inches high, and their slender brownish stems stand over beautiful marbled green leaves.

All early apples should be gathered before they fall and get bruised. Such varieties as Irish Peach, Gladstone, Langley Pippin, Beauty of Bath, &c., will not keep, and should be eaten direct from the tree. When an eating apple loses its green look, when its colour seems to have reached its height, and when it will leave the branch easily in the hand without being pulled, it may be taken as ripe. The same applies to peaches, nectarines and other soft fruit. It should never be "felt" to see if it is ripe. Every time a peach is "felt" or roughly handled it leaves a mark, which when properly ripe will not improve its appearance. If it comes away easily from the stem when gently pulled, it will either be ripe or sufficiently ripe for a day or so in the house to finish, and it will look far nicer on a dinner table than one with brown bruises, or a plum that has lost its bloom.

RASPBERRY CANES.—Here the young ones should be thinned out to six or seven, and the old ones cut out altogether.

Order bulbs for forcing and for the garden, for the sooner they are ordered the sooner they can be planted.

GREENHOUSE.—The Arum Lilies and Salvias and any other greenhouse plants that were planted out during the summer months may be

lifted, repotted and brought back to the house. Arums require good rich soil and plenty of water to induce them to make large flowers and healthy foliage. At the end of the month Camellias, Azaleas, Genistas and other shrubs for early forcing that have been standing out all the summer, can be brought in. A light top-dressing of fresh soil would benefit them all. Veronica Hulkeana, a New Zealand plant, with its graceful spikes of pale lilac flowers, makes an excellent greenhouse shrub. Geraniums, Cinerarias and Primulas for the spring display may be potted on. The Mignonette sown in August will be ready for a pot by the end of the month. If the seedlings have come up too thick, thin some of them out, leaving about five strong ones; later on these can be again thinned, leaving either only one or three of the strongest in a six or seven inch pot. Always pot Mignonette firmly, and do not break up the ball of soil when shifting from one pot to another. Schizanthus, the "Poor Man's Orchid," makes an excellent pot plant. It can be sown during this month, and grown on as directed for the Mignonette. A little care and trouble, coupled with a very small outlay in the purchase of seeds and potting mixture, will enable those with a small greenhouse or conservatory to keep it bright during the dark winter days. The race of Tulips known as Darwins are good subjects for forcing, and their height makes them very useful for indoor work. Amongst those which might be tried are Clara Butt, pink; Harry Veitch, dark red; King Harold, maroon; Mr. Farncombe Sanders, pinky rose; Pride of Haarlem, old rose; Rev. H. Ewbank, mauve; William Pitt, crimson.

The bulbs for growing in bowls in fibre should be planted as soon as possible. Roman Hyacinths are a great success grown in this way and require no more special care than the Daffodils do.

Senecio Hectori.

THERE are thirty species of *Senecio* found in New Zealand, all being confined to this country, except one, which extends to Australia.

We are indebted to Mr. Walpole for the illustration of this *Senecio*, which is one of the most handsome of all New Zealand shrubs. At Mount Usher, in Co. Wicklow, it has reached a height of 6 feet and the same in circumference, and flowered last August. About the same time it also flowered with Mr. Beamish in his garden near Cork.

Senecio Hectori forms an erect shrub with stout branches, with leaves crowded towards the ends of the branches; in New Zealand a height of 6 to 12 feet is reached.

The leaves are very large, from 6 inches to nearly a foot in length, and 2 to 4 inches broad, oblong ovate in shape, roughish on upper surface, and clothed with white cottony down on the under surface. This species may be easily distinguished from all other *Senecios* by the base of the leaf being pinnatifid, the remainder of the blade of the leaf being toothed.

The flowers are white, borne in large branched corymbs, sometimes a foot across. The individual flower heads are from one to two inches across.

When this shrub becomes better known it will find many admirers, and will be an acquisition to those who have a sheltered garden and a mild climate. Several of its relatives will not stand a severe winter, and so it is doubtful if this newcomer will be any hardier.

Notes on some Irish Gardens.

By MISS M. L. KING.

I AM asked by the Editor to give my impressions of Glasnevin and a few other gardens in the neighbourhood of Dublin, which I was fortunate enough to visit about the end of June. For this I must trust to a very deficient memory, for the only notes I took were of plants previously unknown to me.

My general impression is that these gardens are dreams of beauty! arranged to give equal pleasure to the artist, the botanist, and the gardener. In this favoured land most gardens appear to possess a river, or at least a lake; a background of forest trees and alluvial soil, with good granite drainage. Rare shrubs not only grow but flower profusely. *Senecios* and *Olearias* make foamy masses of white and yellow; *Drimys* *Winteri* and *Tricuspidaria* mingle their white and red blossoms; *Abutilon vitifolium* makes standard bushes, and *Pittosporum* allow themselves to be cut into neat hedges. All this at first excites and bewilders one; but it is wonderful how soon one grows accustomed to these marvels and takes them for granted.

Even here all gardens are not equally favoured. Glasnevin claims, I believe, to possess a clay soil and poor climatic conditions; but this does not prevent them from growing *Gunneras* of a most prodigious size, each of whose leaves would shelter a family. *Viola gracilis*, which we grow in a painstaking way in our rock-gardens, here flourishes in the shrubbery border with the freedom of a *V. cornuta*.

A striking feature of Glasnevin is the double approach to the rock-garden—by the gloomy avenue of ancient yews, beneath whose shade Addison took his daily walk, and between the brilliant borders of herbaceous plants whose rich colouring and varied shapes made a grand effect. The rich blue shades, so necessary for a background, were well given by the *Anchusas* "Dropmore and Opal," *Delphinium* "Persimmon," *Lindelia* *spectabilis*, *Salvia pratensis* *atroviolacea*, and the herbaceous *Veronicas*; others threw up the brilliant shades of rose and pink,

of which, perhaps, the most noticeable was the Oriental poppy, "Victoria Louise," with its fine erect blossoms. Amongst the foliage plants I noticed a good variegated *Comfrey* (*Symphytum*), which was very effective.

From these we passed on to the rock-garden, which is well designed to show an immense collection of mountain plants. The high Alpines and other difficult subjects are given "moraine" treatment, and peat, of course, is supplied to the *Ericas*, *Gaultherias*, *Andromedas*, terrestrial *Orchids*, &c. A magnificent clump of *Orchis latifolia*, about 3 feet high, and visible from a great distance, was, perhaps, the best thing out at this time. Amongst uncommon and attractive plants I noticed specially *Celmisia spectabilis*, *Helichrysum bellidioides* and *Veronica girdwoodiana* (New Zealand), *Kirengeshoma palmata* (Japan), *Veronica coriacea* (Western China),

Veronica telephifolia (Caucasus), *Mimulus Lewisii*, and *Geranium Fremonti* (N. America); a pretty globe flower, *Trollius pumilus*; a charming variety of *Spiraea Aruncus*, with cut leaves, named *Kneiffii*; and several good *Dianthus*, the Glasnevin form of *D. atro-rubens*; a good hybrid *Alpinus* + *Superbus*, and endless other treasures. Indeed all the best rock-garden favourites are represented.

By the water-side, *Primulas rosea*, *japonica*, *sikkimensis*, *pulverulenta*, *Bulleyana*, *Beesiana*, *Poissoni*, &c., were well cultivated, and appeared quite at home, though most of them, of course, had finished their flowering season.

Glasnevin is a limestone garden, so the silver *Saxifrages* flourish, and there is a very complete collection. A variety of *lingulata* named "Alberti" seemed a speciality and a free good doer. *Sax. Cotyledon* "Icelandica" and *Sax. Macnabiana* appeared to me to vary a little in form from those usually bearing these names.

In the botanical part of the gardens are collections of *Iris*, *Pæonies*, and *Hellebores* of the greatest interest.

Mount Usher was approached with the slight prejudice one always feels towards a much praised object. But in a few minutes the charm of the garden possessed one and the spirit of criticism was succeeded by profound and whole-hearted admiration. Nature, art and science here combine to make the perfect garden! In



SENECIO HECTORI

6 feet high, at Mount Usher, Co. Wicklow.

a few acres are collected all that is best worth growing in this favoured climate. In the brilliant flower garden crowded with old and new border plants—Lilies, Roses, Lupins, Salvias, Geraniums, Poppies, Cistus, Phloxiums, Echiums, &c.—my eye was first caught by the immense rose and purple blossoms of *Cistus purpureus* flowering in profusion; with us it is rather a shy flower. *Sparaxis pulcherrima*, which was then in bud, is a great feature, and apparently sows itself all over the garden. Still more wonderful! *Omphalodes Lucilie* was scattered about after the manner of the garden Forget-me-Not. The seedling plants varied a good deal in the size and colour of their leaves. *Myosotidium nobile* was still sending up a few flowering shoots, which gave one an idea of what the opalescent blue of its spring flowers must have been; and *Myosotis azorica* made sapphire carpets on the ground.

By the waterside, bog Primulas, many of which were quite new introductions, appeared naturalised; *Ourisia coccinea*, with us so difficult, in these Irish gardens spreads itself like a "Creeping Jenny"; Irises, Spiraeas, Astilbes, Tradescantias, Saxifraga peltata, Rodgersias, Senecios, and their like appear to take care of themselves. The tall orange flowers of *Trollius sinensis* make a good effect on a river bank. Then the ferns! Never were ferns grown under such perfect conditions, nor arranged more conveniently for the visitor. But I must leave the description of them to others with more knowledge.

If I may be permitted a criticism, I thought in this and similarly favoured gardens the so-called "moraine" is unnecessary and ugly. Saxifrages can be done equally well in a wall, and are more in keeping with their surroundings. Of course I am not speaking of the rock-garden proper, in which they are most suitable. Of these, we visited in Ireland a most perfect specimen! It was so extensive and so beautifully designed that one had a real feeling of being amongst the mountains. The plants seem to feel it too, for they grow and spread themselves in a most natural way.

I cannot close an article on Irish gardens without referring to Mr. T. Smith's nurseries at Newry, a visit to which alone would repay one for crossing the channel. Here one sees grown under the happiest conditions trees, shrubs, and plants from all quarters of the globe. Limestone and peat plants were equally thriving and floriferous. Why should everything flower so much more freely in Ireland than with us? It cannot be that there is more sunshine; it must be the wonderful properties of the soil, which also seems to impart a rich, full colour to the blossoms. It is difficult to say what is the principal feature in a garden where everything is so well represented; but what interested us, natives of a limestone country, most was Mr. Smith's immense collection of Rose species, Scotch briars, and old English garden Roses.



ANAGALLIS GRANDIFLORA.

This beautiful annual is seldom seen, and it simply revelled in the August sunshine, making the best bit of blue on the border. Imagine a large Pimpernel growing six inches high covered with a mass of lovely, large gentian-blue flowers and you get a good idea of this sun-loving annual.

Sweet Peas for Everyone.

By JAMES CUSSEN, late of Manor House Gardens, Raheny.

THE failure of the average person who has not been successful with Sweet Pea during this season can in many cases be traced to the late spring sowing. I have seen hundreds of failures in the County Dublin, and especially around Raheny, while my autumn-sown Sweet Pea is just 12 feet in height, and has been blooming since the end of May, and is the envy of the parish to-day. I have worked very hard to bring the culture of this beautiful annual to a high standard in this neighbourhood. My assistant, after two years' training, has done wonders on the exhibition table, and captured the Unwin medal at Terenure. His flowers stood alone, they were a long way in advance of any of the rest in his class.

Two years ago he did not know what a waved Sweet Pea was. It is my sincere wish to see thousands like him at work next season. The first step on the road to success is to procure the varieties which have proved their value during this season. I give twelve, which I think are the best twelve for the average man, in their order of merit:—Hercules, R. F. Felton, Nubian, Mrs. Cuthbertson, Paradise Carmine, Marks Tey, White Queen, Edna Unwin, Mrs. Breadmore, Sunproof Crimson, Dobbies Cream, and Prince George. Get these twelve, for they are within the reach of all; place your order with your seedsman at once, so as to have them by the end of September.

Prepare a small frame, and place in it one foot of ashes to plunge the pots up to their rims. Chip all the seeds before sowing, put four seeds in each 4-inch pot with a pinch of sand around each seed, which should be covered half an inch deep. After a few traps have been set for mice the frame should be kept close until all the seed has germinated. Then throw off the lights altogether, keeping the frame always open, except during heavy rain and frosts.

The best time to sow is from the end of September to the end of October. During October open the trenches 3 feet deep and 2½ feet wide, break the bottom up well with a hack, return the soil for about one foot, then put in the manure and soil, mixing both together for another foot, then put in the top spit, using plenty of soot or lime.

My Sweet Peas treated in the above way have given flowers of the finest colour and size, with stems which average 20 to 24 inches long, and many carrying 8 blooms, none with less than 1 bloom.

I leave four shoots to each plant, keeping all the rest rubbed out; I hoe the trenches twice; and as I give no feeding, or even watering, I claim all the advantage for the deep trenching.

No disease of any kind attacked my plants, which will remain in flower up to November if the weather is not too unkind. Stakes are much the best kind of support on which to grow Sweet Pea. Wire, though more lasting, is cold in spring and too hot in summer.

Wishing every success to all my readers and more competition from the average man at our shows during 1914.

Notes on Insect and Fungoid Pests Injurious to Fruit.

APHIDES are our most troublesome insect pest, although we have a fair share of most. Canker is our most troublesome and destructive fungoid pest. The weather at the time our plums and pears were setting was rather unfavourable. They appeared to set heavy crops, which failed to swell properly. The apples blossomed late and gave great promise, but were likewise disappointing. Our peaches under glass behaved in a similar way to our plums. It would appear that the badly ripened wood is the cause of our tree-fruit crop being under average, yet our rainfall last autumn was not excessive.—GEO. BOGIE, Pakenham Hall, Westmeath.

Apple and plum aphid and codlin moth are our worst insect pests. Apple and pear scab are very virulent this year. In this locality there was a magnificent show of all kinds of fruit blossoms in their respective seasons, but the weather conditions prevailing—viz., incessant rains, with sunless and cold days and cold nights—rendered a good crop of the large fruits impossible.—A. BARKER, Carrigan, Co. Clare.

Canker troubles us in some varieties of apples, and occasionally a little American blight, otherwise we are fairly free from insect and fungoid pests in this district. On the whole this is a poor fruit season, pears and plums are very scarce, which I think is owing to the cold and sunless summer of 1912.—E. J. ROGERS, Cahir Park Gardens, Tipperary.

In most parts of this county insect and fungoid pests are fairly prevalent. Apple sucker and caterpillars of winter moth and gooseberry sawfly are the most troublesome insects. The chief fungoid pests we suffer from are apple and pear scab and the old offender, canker. It is interesting to note that the acreage devoted to the cultivation of fruit in West Cork has increased largely this season. Farmers are now realising that the industry is worth taking up on a commercial scale.—S. E. CAVANAGH, Bandon, Cork.

Our most troublesome diseases are canker and American blight on apple trees and a few ermine moth. We are almost clear of aphid and caterpillars this season. All fruit trees blossomed well and seemed to have set a fair crop, but dropped very much when about the size of peas. The weather continued cold, wet, and windy till the middle of June.—P. D. REID, Cong, Co. Galway.

Canker and apple scab are the most troublesome fungoid pests. Insects are not troublesome this season. Old apple trees are bearing very poor crops. Young trees are bearing fairly well. Strawberries are good all round. Royal Sovereign and Leader are doing best, but the new variety, King George, promises to do well, and may equal or prove to be a better one than Royal Sovereign. Loganberry is the best of the other fruit, but Japanese Wineberry is becoming more popular.—E. H. BOWERS, Garden House, Roscommon.

Trees are very clean and free from insect pests this season. American gooseberry mildew is our most troublesome fungus, a heavily fruited plantation having to be destroyed through being hopelessly infected with this pest. There never was a year I should think when fruit trees of all kinds promised so well in February, but owing, in my opinion, to the wet sunless summer of 1912, the fruit buds had no vitality, and failed in

thousands either at the flowering period or when the fruit was at its second swelling.—T. E. TOMALIN, Bessborough Gardens, Piltown, Co. Kilkenny.

Severe frosts caused bud-dropping on gooseberry and currant bushes on exposed sites, and also damaged apple bloom even before fully expanded. Apple sucker was observed in several districts, and winter moth and ermine moth. Caterpillars were bad on apple trees, also American blight on a number of old trees. Gooseberry sawfly was noticed in a number of gardens, but not so severe as in past seasons. A few cases of American gooseberry mildew and black currant mite were noticed. Ordinary mildew rather severe on some varieties of apples. Aphid, except on a plum, has not caused so much damage as in past seasons. Bramley's seedling in cultivated land and in sheltered positions is cropping very well in general. Growths now look clean and vigorous on apples, gooseberries and currants.—JAS. BRACKEN, Cloughjordan, Co. Tipperary.

Strawberry Notes.

THE present fruiting season has been a very favourable one. The fruit ripened about the average time. Owing to the wet autumn of last year the crowns were very strong, consequently the crop of fruit was above the average, in this district at any rate.

We found the following varieties have done exceptionally well this season:—Royal Sovereign, The Bedford, Laxton's Utility, and Laxton's Latest.

During the fruiting season the weather was very dry, but the plants held out wonderfully, as it was dull. The quality of fruit was exceptionally good, also the size of the berries.

The value of hoeing has been again exemplified this season, as we have often repeated in our cultural hints. It is one of the great secrets to hoe the ground, whether there are any weeds or not, as it prevents the moisture evaporating from the soil.

Another point we should like to dwell upon is the firm planting of all strawberries; they cannot be made too firm, providing the soil is in proper condition when they are planted.

Bedford, Aug. 8.

LAXTON BROTHERS.

LIST OF TREES AND SHRUBS IN THE OPEN AT FOTA, 1912.

FOTA Island, the demesne of Lord Barrymore, is the home of many rare shrubs and trees, and is one of the finest examples of what can be done when almost all conditions are favourable and the climate mild.

There some of the rare Mexican Pines have formed good specimens: Lavateras, Feijoa, the Scarlet Mitraria, and other plants, often grown in greenhouses, thrive in the open air.

This list gives the name of the plant and its country of origin, with sometimes a synonym added, the names being arranged in alphabetical order.

These published lists of plants in the larger gardens are becoming popular, for they help the visitor to obtain a good idea of the collection, and also are a help and guide to other intending planters if climate and such conditions are taken into account.

Influence of Water on Fruit Trees.

By W. USHER, Brenanstown, Co. Dublin.

THE results of an experiment which I tried last year might interest some of your readers. I have got eighteen "Cox's Orange" apple trees: these trees are about eight years old, trained open bushes, some on Crab, some on Paradise stocks, and were carrying a fair crop in August, 1912. The fruit was not up to average quality; the trees were making what I thought to be far too much wood of long-jointed soft nature (as indeed most trees in the orchard were doing). I selected six out of the eighteen, carefully removed the soil from one side, and with a chisel cut through two or three fairly strong roots. After a week or ten days I noticed that the apples on those trees improved in size and colour to a greater extent than those on the unpruned trees. This year these trees are the only ones of Cox's carrying anything like a crop of fruit. Physiological botany teaches us that the roots take in water in which are nitrates and other mineral salts in weak solution; those are passed on to the foliage to be properly manufactured for plant building. The leaves give off water, more or less, according to the climatic influences then prevailing. If the root takes more water than is required, or that there is very little given off by the leaf, we get a lot of long, soft growths with a long distance between the joints, and but few fruit buds, thus showing that the balance had been destroyed. And the leaves which, as well as giving off water, take in carbonic acid gas, which is used in conjunction with the nitrates, &c., in the manufacture of starch, sugar and albumen. And under ordinary circumstances this work goes on satisfactorily, but when we get weather conditions such as prevailed last summer it is only reasonable to suppose that a change takes place in the life of the plants; it has been taking in too much or evaporating too little water, with the result that the leaves are over-charged with moisture, and thereby prevented from changing those mineral salts and carbon gas into starches and sugars. And as it is, those materials which are used in the manufacture of fruit, fruit buds and seeds, it stands to reason that the fruit cannot be of first rate quality, that fewer fruit buds will be formed, and that seeds are certain to be of a poorer quality, their germination being below average. Therefore, by cutting off some of the water supply we give the leaves an opportunity to carry on their natural functions; and although under normal conditions those trees might not require root pruning, it became necessary under conditions which prevailed last summer; and had I restricted root action in all the trees I believe I would have had a very much better crop of fruit all round, and that the want of sunshine could have been somewhat remedied by a restricted root action.

It is for somewhat similar reasons that we root-prune trees that have sent their roots down to a depth where water is plentiful, and that plentiful supply of water causes the tree to make a large quantity of strong wood with but few fruit buds, and although we may have a succession of normal summers, the tree does not bear fruit as it should do; but when properly root-pruned, in nine cases out of ten we bring it into fruit bearing. To sum up, I believe it necessary to restrict root action in abnormally wet summers if we are to get a crop of fruit the following year.

Varieties of Potatoes.

A TRIAL of early varieties was made on a light soil overlying red sandstone to compare the cropping power and length of time required to produce a profitable crop. Half an acre was planted with the following varieties:—Eclipse, Edina, Express, John Bull, Midlothian Early, and New Success. The seed was obtained from Midlothian. The ground received 12 tons of farmyard manure per acre in winter, a dressing of 3 cwt. of superphosphate and 1 cwt. of sulphate of potash at the time of planting, and 1 cwt. of nitrate of soda—half at the time of harrowing down the ridges when the shoots appeared, and the remainder when the crop was moulded up. Unsprouted sets were planted on February 28th and 29th.

All the varieties were well through before the end of April: moulding up was completed about the middle of May; and lifting commenced on June 20th. The varieties were ready for digging in the following order:—Express, Midlothian Early, Edina, Eclipse, New Success. John Bull was a failure. A portion of each was reserved and lifted in August, when the following yields per acre were obtained:—

Variety	Ware	Seed	Chats and Diseased	Total
	tons cwt.	tons cwt.	tons cwt.	tons cwt.
Edina	3 17½	1 9	1 6½	6 13½
Midlothian Early	3 15	1 8½	1 4	6 7½
Express	3 2½	1 11½	1 2½	5 16½
Eclipse	2 18	1 6½	1 17½	5 1½
New Success	1 17½	1 17½	1 4½	3 19

In a further trial with small quantities of the same varieties which were sprouted before planting on April 6th, the order of ripening was:—Midlothian Early, Express, New Success, Eclipse, Edina; and it was found that better shaped and cleaner skinned tubers were obtained than in the case of the early planted and unsprouted "seed," which indicates the value of boxing the "seed" of early varieties. It is stated that of the five varieties, Midlothian Early and Express were the most profitable, while Midlothian Early and New Success were best as regards quality. In a trial of a large number of early, mid-season, and main-crop varieties the best as regards quality were:—Early Varieties: Early Favourite, Early Russet, and Early Short Top. Mid-season Varieties: Dalhousie Seedling, Snowball, and Recorder. Maincrop Varieties: Redskin Flourball, Laird, Monarch, Eastern Planet, and Peckover.

Spraying with Bordeaux Mixture.—This mixture in solution was applied in the following strengths: 2 lb. to 20 gallons of water, and 2 lb. to 15 gallons, at the rate of 50 gallons per acre, to the variety Conquering Hero on July 3rd, and again on July 26th. It was found that while there was practically no difference between the yields on the plots sprayed with different strengths, there was an increase in the sprayed plots over the unsprayed of ware 1 ton 6 cwt. 1½ qrs., and seed 5 cwt. 1½ qr. per acre.—(Harper Adams Agricultural College Report on Field Experiments, 1912, in the *Journal of the Board of Agriculture*.)

Welsh and Himalayan Poppies.

THE Welsh Poppy (*Meconopsis cambrica*) is a familiar plant in many gardens, and is now represented by double yellow and orange flowers. These Poppies seem to thrive in almost any kind of soil provided it is well drained, and once established there is no difficulty, for self-sown seedlings spring up freely around the parent plants, the doubles seeding almost as well as the single forms.

Providing the seed pods are constantly picked off, they give a long season of flower and give a bright bit of colour in the herbaceous border, their height being about two feet. The single form also makes a worthy companion to associate with *Erigeron mucronatus* and *Corydalis lutea* on old crumbling walls.

The Welsh Poppy is found wild in W. Europe, from Ireland to the Pyrenees, and, of course, is a good perennial. There is also a beautiful little annual called *Meconopsis heterophylla*, growing only a foot high, now bearing bright orange-red flowers. This requires to be sown each spring where it is to flower, and is the only kind which is found in America.

All the other species in general cultivation are natives of the Himalayas. With the exceptions of *M. grandis* and *racemosa*, they are biennials, and *M. Wallichii*, with its blue satin flowers, is the most beautiful of all. The seed ripens about August, and should be sown when dry, soon after gathering: it then will usually germinate freely, but if kept until spring, may take a long time to come up.

Meconopsis Wallichii will not stand drought, but the soil needs to be well drained to carry away the water in winter. Provided the drainage is good there is no need to coddle the plants by covering with sheets of glass in winter, as is often recommended. At Glasnevin we find these biennial Poppies, such as *M. Wallichii*, *nepalensis*, *paniculata* and *integrifolia*, appreciate manure, and plenty of old cow manure is mixed with peaty soil a foot below the surface. With such preparation *M. Wallichii*, planted in the open spaces of Rhododendron beds, has reached seven feet in height, bearing numerous blue flowers three to four inches across.

By saving seed of the best blues one soon gets them to come almost all with that satin-blue shade so much admired, but by all means keep the plants away from the clarety-coloured *M. nepalensis*, for they are so nearly related—probably colour forms of the same plant—that they intercross too freely. In a partially shaded place the flowers last longer than in the bright sun.

These Himalayan Poppies are usually considered plants which are not too easy to grow, so that it is refreshing to find one that grows well and is a good perennial. The first time I saw *Meconopsis chelidoniifolia* was in the late Mr. Gumbleton's garden, growing in ordinary soil on a border. Although not so striking or beautiful as the blue biennial Poppy, yet this new

comer is pretty and attractive. Last year it was two feet high, this year it has grown four feet, planted in a peaty soil. The stems are very slender, branching out freely at flowering time, in July, when the stems turn quite a deep brown or nearly black. The ovoid flower buds are smooth, gracefully hanging on wire-like stems. The flowers are yellow, one and a half to two inches across, with crimped petals: the pods are hairless; the leaves are trilobed; although rather similar to those of the Great Celandine, they are not so deeply lobed and are less toothed.

Another good point about *M. chelidoniifolia* is the freedom with which it may be increased. The roots divide easily in

spring, and last year bulbils were produced on the flower stems which produced young plants.

With these good qualities this plant ought to be a useful one to the hybridist.—C. F. B.



MECONOPSIS CHELIDONIFOLIA.

A new yellow-flowered perennial.



At the Shrewsbury Show, which is one of the largest and best attended in the United Kingdom, Messrs. Alex. Dickson were awarded a large gold medal for a display of their famous Hawlmark Roses covering a space of 120 feet square. In the competitive class for decorative tables of Roses competition was very keen. Messrs. Hugh Dickson secured the Society's gold medal for a charming display of their world-famed Roses.

Apple Growing in the North.

ARMAGH holds the pride of place as an apple growing county in Ireland, and year by year the acreage increases, for the farmers have found that apples are a better paying crop than flax. In the north near Portadown and Armagh the bigger part are grown, and around this district one sees apple trees everywhere in grass and tillage among the corn crops.

Although the commercial aspect of fruit growing is so different to growing fruit in private gardens, yet many of the best Ulstermen have found by experience that it pays them well to manure, grease-band, spray, and prune their trees; although nearly all recognise that it is imperative to keep an apple tree open, giving each branch sufficient light and air, yet it was formerly done by cutting out whole branches; now many are adopting the spur pruning system with good results. The ground generally is a good stiff loam which holds the moisture well throughout the summer. In the low-lying parts the trees are planted on broad ridges. Last wet winter many trees were planted without holes being dug at all, the soil being thrown up in a broad ridge over the roots.

Throughout the district one seldom sees a standard tree, the open bush being much easier to manage in every way. The fact soon strikes one how few varieties are grown in quantity. Bramley's Seedling is the sheet anchor of the northern growers, and is grown more than all other kinds together. Lane's Prince Albert is also seen, but is considered tender when compared with Bramley for field work. The more tender leaf will not stand the spraying so well, and is more liable to attacks of fly, but its advantage lies in the early fruiting; on wholly cultivated ground it is much better than on grass. Grenadier has won a good name as an early sort, a good healthy grower; it crops freely, and part of the crop may be marketed very early before fully grown at the end of August. Of course, when ripe it will not keep.

Medal seems to have been largely planted some years ago, but proved to be very liable to disease and canker, so it has been nearly all regrafted with Bramley. Worcester Pearmain, Beauty of Bath, and other dessert apples, the growers say, are not a success, for they do not colour very much in the north. In some orchards there are large trees of Martin's Seedling or No Surrender. Although a fine apple, J. W. Hagan does not recommend it. A few Royal Jubilee and Royal Codlin are grown, while one grower does well with Lord Derby, but the general idea seems to be that it is too liable to canker.

Most of the growers favour the planting of maiden trees, some plant their Bramleys on free stock, 18 x 18 feet, others now favour 18 x 21 feet, for they find in 12 to 14 years the trees are almost touching each other. The ground is chiefly ploughed, and, of course, should always be cleaned by potato or other crops before thinking of planting. Currants are often planted in the lines between the apples, and may be cut out when the apples require more space; between the rows such crops as potatoes, roots, &c., are grown; and to save expense the ground is worked by horses as long and as near to the trees as the branches will permit. Bush fruit is seldom planted between the rows of apples, as space enough for a cart is required to manure and attend to the trees.

Shows.

Royal Horticultural Society.

Held in Lord Iveagh's Grounds, St. Stephen's Green, Dublin, on August 26th.

AN exceedingly good all round show was the general verdict, and one which we fully endorse, though we had not time to minutely examine everything. It is significant of present day gardening that by far the greater part of the show was composed of hardy plants, fruits and flowers.

The exhibits of strictly indoor produce were not numerous on the whole, though certainly in some classes there was a creditable number of entries. The trade exhibits as usual were meritorious, and in fact they go a tremendous long way to make the show attractive and educational.

Messrs. R. Jameson & Sons were awarded a gold medal for a most effective display of which the groundwork was composed of Ferns and Asparagus. Tasteful groups and bouquets of Carnations, Liliums, Geraniums, Larkspurs, and single China Asters were noticeable, while other foliage plants lent beauty to the scene. Here and there were tall plants of *Cocos plumosa* of graceful habit; the whole well maintaining the firm's reputation. An original and effective design which attracted much attention was a badge of the 5th Royal Irish Lancers. Two groups of Geraniums were prominent, a fine glowing form of *Maxime Kovalesky* and a good semi-double pink called *Virginia*.

Messrs. Chas. Ramsay & Son had a tasteful and effective combination of hardy and indoor flowers and plants, for which they were given a gold medal. Their principal flowers were bouquets of Roses and Carnations delightfully put up, while masses of *Gladiolus America* were striking. A large central group of *Hydrangea paniculata grandiflora* was noticeable. The groundwork of the whole exhibit was formed by a dense carpet of nicely grown ferns, the entire group edged with *Gloxinias* and low trailing plants of sorts.

Messrs. Drummond received a gold medal for staging an interesting and attractive exhibit of hardy plants and shrubs; at one end was a small water garden, with aquatic and quaint Pitcher plants and the coral berries of *Nertera depressa*, overtopping all were huge fronds of *Lomaria magellanica*, a fern hardy in many gardens. Other interesting plants were *Calceolaria alba*, *Sidalcea oregana*, *Aconitum Wilsoni*, *Benninghausenia albiflora*. *Lachnanthes tinctoria* is a very uncommon, but an ugly, North American plant, while *Sheffieldia* or *Samolus repens* should be noted for the rockery—a native of New Zealand, of creeping habit, bearing small white flowers.

Sir J. W. Mackey, Ltd., had an outside stand to exhibit a choice selection of bowls and vases for growing bulbs. Bulbodin, their special compost for bulb growing, has been a great success. A dainty selection of the hybrids of *Gladiolus primulinus* mixed with *Gypsophila* showed that these forms are probably the most beautiful of all for cut purposes. All show the hooded upper segment peculiar to *Gladiolus primulinus*, but in colour they vary from straw to deep yellow, orange-salmon to light scarlet.

Messrs. Pennick, of Delgany, brought a fine collection of hardy plants and shrubs, forming a bright and showy group, for which they received a silver medal.

Messrs. Hogg & Robertson were awarded a silver medal for a very showy stand of *Gladioli*

in numerous variety, which were greatly admired by visitors.

Roses as usual were a feature of the show. Messrs. Alex. Dickson had a very fine stand which took up half one side of a tent, and was awarded a gold medal. Their Hawmark novelties and others so engaged the attention of the visitors that it was difficult to get near enough to see the Roses. Cactus Dahlias were also well shown by them, while their herbaceous stuff was very well grown.

Messrs. Hugh Dickson secured first prize for a stand of decorative Roses. Beautiful arches of Lady Godiva, Dorothy Perkins, Hiawatha decked their stand; also novelties like Muriel Dickson, a bright cherry, and H. E. Richardson, a vivid crimson their Sir William Ewart and H. P. Pinkerton winning in classes 38 and 39 for novelties. Another first was awarded to this firm for a fine stand of 72 blooms.

Considering the dry summer, Sweet Peas were well represented. Mr. F. Cowdy, of Loughall, being the chief prize winner. In the champion class—18 bunches in 18 varieties—he won with clean, strong and good-coloured blooms, well arranged and neatly labelled.

One wonders whether it would not be better to have popular flowers like Carnations and Roses clearly named, as it is certainly a nuisance to have to keep on asking, especially when there are so many varieties nowadays and the attendant is often engaged with other people.

SPECIMEN PLANTS.—Zonal and Ivy-leaved "Geraniums" were prominent in the cool section, and some large, well grown pots of the ever popular Coleus. The warm house section we could only glance over, as the tents by this time were uncomfortable. Our old friend Stephanotis, also Cissus discolor, Bougainvillea, &c., showed up as attractive as ever.

Taking the fruit as we came to it, melons were a very good lot, as good as ever were shown probably. There was hardly a really weak fruit, and the best were fit for any table.

Apples were a very fair show considering it is yet early for them. Some of the dessert varieties were indeed appetising, Irish Peach being prominent. Want of time and the crowd prevented the noting of varieties and prize winners, but our general impression was good. Culinary varieties were also fairly numerous, but it is rather early for them. A very noticeable dish was a highly coloured sample labelled Cox's Pomona. The colour was so good that the fruits must have come from pot trees against a wall. Alderman Bewley was the exhibitor.

Peaches were a very good lot on the whole; and though personally we like the medium-sized highly-coloured fruits, yet the huge specimens from Lord Decies' garden were certainly wonderful examples of cultural skill.

Grapes, to put it frankly, are not a strong feature in Dublin. For two bunches of black grapes the first went to Madresfield Court, shown by Alderman Bewley. They were fair-sized bunches, nicely finished, but the berries were about half the size they should be. The 2nd prize went to a pair of very nicely grown and finished Appley Towers from F. V. Westby. Hamburgs were only fair, and on the whole not too well coloured, but it is an early grape and loses colour with keeping. Muscats were wretched, most of them green, and not one bunch well finished. There is room for immense improvement in the grapes.

The class for 12 dishes fruit brought forth only one competitor—viz., Alderman Bewley—who

well deserved the first prize. In this exhibit were some of the best grapes in the show, while the apples, melons, peaches, nectarines, plums, &c., were all of high excellence, a beautiful and praiseworthy exhibit; and this is a class in which we would like to see keen competition.

Further on were fine dishes of red and white currants in rare condition, demonstrating the value of a late supply where much fruit is wanted. Close by, too, were several dishes of that useful fruit, the Loganberry, so good for tarts, &c.

Class 24.—Collection of hardy cut flowers on a space 16 feet by 4 feet, drew some good exhibits. H. M. Barton was placed first with a very good lot. Some nice vases were *Coreopsis verticillata*, *Montbretia rosea*, *Astilbe Davidi*, *Alströmmeria psittacina*, *Platycodon grandiflorum*, &c. Mrs. Mitchell was second, and Captain Riall was third. Unfortunately a strong and well arranged exhibit, which would have given the first a good run for place, was disqualified on the point of some flowers not being hardy.

The Annuals were good, Col. Crichton (gardener, Mr. Mitchison) winning first with a showy and bright dozen.

Carnations were a strong class. T. F. Crozier winning with 12 fine vases.

In border Carnations, E. C. Hardman won first with some fine flowers, some of which were unnamed seedlings and some good vases of Elizabeth Schiffner, Dublin Pink, Fiery Cross, and Painted Lady.

Lord Carew showed one of the finest boxes of double tuberous Begonias, 21 blooms, which has been seen in Dublin for many a long day; 2nd place was won by H. Stubber, and 3rd by T. F. Crozier.

Visitors seemed to greatly appreciate the band of the South Irish Horse, and in the afternoon the Lord Lieutenant and the Countess of Aberdeen, accompanied by the Countess of Kimberley, inspected the show.

Naas Horticultural.

THE Naas District Horticultural Society held their annual show in the Fanning Society's premises on August 15th. Favoured with warm weather, with just an occasional shower, the numerous visitors spent a most enjoyable afternoon; sports and various competitions engaged the attention of the young and athletic.

In spite of the dry summer the exhibits inside the building gave a feast of colour, although the Sweet Peas were not so numerous as last year.

In class 90, Col. Crichton (gardener, Mr. Mitchison) won the first prize and Edward Cowdy (Challenge Cup with six very fine bunches of Sweet Peas, which included the following varieties:—Barbara, Agricola, Mrs. Unwin, Efrida Pearson, R. E. Felton, T. Stevenson. Lady Carden was second with good flowers, in which a fine vase of R. E. Felton was conspicuous.

Roses were a feature of the show. Messrs. Alex. Dickson won in the nurseryman's class for a silver cup with a very fine stand of Roses and mixed cut flowers. Their George Dickson Rose was shown in great form, tremendous flowers of great depth and large velvety petals. Carine is a really beautiful Hybrid Tea, pink, with an apricot centre. The new Queen Mary was there with Sunburst, and Miss Alice de Rothschild like a dwarf Maréchal Niel; but for colour, one's gaze flew to the single Rose, Irish Fireflame.

Carnations and hardy flowers were very good. *Thalictrum Delavayi* is a beautiful Meadow Rue from China, while *Pyrethrum delicata* seems to be lavish in giving a second crop of flowers.

Messrs. Pennick had an interesting stand of shrubs and hardy cut flowers, which included the graceful broom *Genista atnensis*, *Spiraea Douglasi*, *Desfontainia spinosa*, *Sollya heterophylla*, *Trachelium cœruleum*, &c.

In class 83, for 12 bunches of hardy flowers, the Countess of Mayo won the silver cup with well grown stuff; Mrs. S. J. Williams was placed second. In this group was the lovely pale blue *Campanula lactiflora*, which was the finest vase of the herbaceous cut flowers in the show. *Gladiolus America* was another outstanding vase. Col. Crichton won the first prize in a similar class for 6 bunches with a showy group. T. P. Brophy winning in the amateurs' class for 6 bunches.

The annuals were very good. Col. Crichton winning in the class for 12. Some good vases were *Statice Suworowi*, *Celosia*, yellow and red; *Sutton's Perfection Stock*, and *Clarkia Salmon Queen*. Mrs. S. J. Williams was second. *Coreopsis* and the *Carmine Stock*-flowered *Larkspur* were pretty.

Vegetables were good; in class 112, for a collection of 9, Col. de Burgh won first with well grown examples. Mrs. Synott coming a good second.

Co. Clare Horticultural Society.

THE popular summer show of the Co. Clare Horticultural Society was held on Wednesday, 30th July, at the County Courthouse, in ideal weather for such a function, with the result that there was a larger and more fashionable attendance than we have seen at recent exhibitions of the society. It was generally pronounced to be one of the very best flower shows yet held by the society. Perhaps the outstanding feature of the show was the superb display of Sweet Peas, and in this section Mrs. H. V. Macnamara fairly swept the boards with the charming selections she had on view. Some of these were sister flowers to the beautiful specimens with which she had gained distinction at the great London Sweet Pea show the other day, while an exhibit of Double Begonias, sent by Mr. Courtenay Croker, Limerick, came in for much notice. It was a stand of twelve blooms tastefully arranged and staged so as to show off in contrast the vivid colouring of some and the delicate shading of others to the very best advantage. They received the very highest encomiums of expert growers, and were declared to be among the best of their kind seen in the West of Ireland.

In the vegetable section there was an excellent exhibition, and, as usual, the cottagers' classes filled well; indeed, all the classes were well supported. Major Hickman had an excellently-staged stand of many varieties, which was a capital illustration of how arrangements for show purposes could be effectively carried out. Considering the season, the potatoes shown were of remarkable excellence, of good size, clean, sound, and firm. One lot was a new variety shown by Mr. Thomas Collins, and it was deservedly awarded a first prize.

The judging during the day was efficiently discharged by the following gentlemen:—In the amateur and cottagers' classes—Mr. Sleight, Kilboy, Nenagh (gardener to Lord Dunally); and Mr. W. Early, Glenstal, Limerick (gardener to Sir Charles Barrington). In classes for amateurs with professional assistance—Mr. C. Farmer, Woodlawn, Co. Galway; and in the special classes and Sweet Peas, &c.—Mr. J. Barry, Blackwater, Limerick; and Mr. C. Herlihy, Mount Cooke, Kilmallock.

The Month's Work.

The Flower Garden.

By J. H. CUMMING, Royal Dublin Society, Ballsbridge.



GENERAL REMARKS.—In September the flower gardener is thinking of the provision for refilling his beds and borders during winter and spring, and also stock for next summer's display. Growth will now be on the wane. Chilly nights leave their effect on many of the tender bedding things. All arrears of propagation must be brought forward, and it is well to pot up old plants of anything that is somewhat scarce or difficult to keep as cuttings during the winter. This applies to some *Pelargoniums*, *Lobelia*, *Alyssum*, *Heliotropes*, *Fuchsias* and *Calceolarias*. The latter has not done well this dry summer, but has proved the value of the variety *C. amplexicaulis* for such a season. It has bloomed incessantly where other summer varieties have succumbed to the drought. It is somewhat tender to keep in frames during winter, so a supply in boxes that can be removed to the protection of a house will keep the grower on the safe side. Where Annuals are past and unsightly, clear them off, also dead flower spikes should be removed, and so make the best appearance of the flowers remaining. Asters will now be coming in, and if

they show signs of flagging give a good watering. Few borders up to the present are as moist as one would wish.

LAWNS.—The dry summer has not been favourable to young grass sown last April. Many defer the laying down of lawns till the month of September. Where this work has now to be done the ground should be at once prepared by digging and levelling all to a smooth, firm surface. If time permitted the ground could be left for the germination of weed seeds. When these appear they can be easily destroyed and so leave the ground absolutely clean for the grass seed. Thick sowing is a necessity where the desired result is a close and clean turf of finest texture. One pound of seed will sow 16 super. yards. For renovating old or worn turf rake it over and remove any moss or weeds that may come away loosely and sow a third of the above quantity, but the state of the turf will guide whether to sow more or less. The feeding of lawns is often much neglected, and the effect is lawns covered with daisies, plantains, dandelions, &c. No lawn can retain the beautiful green colour it ought to have unless it is fed. Most nurserymen supply a good fertiliser, which should be used at the rate of 3 cwt. to the acre.

VERBENAS.—I have seldom seen these done so well as this year at Mount Merrion, Blackrock. On a mixed border there are grand masses of *Verbena Miss Willmott* which are really charming. Its deep rosy pink trusses rise well over the foliage, and I can remember when this variety was introduced years ago it was shown largely in

five-inch pots and took everyones fancy. A dry season like this has just suited *Verbenas*. They are often just raised from seed in March, but to keep good sorts over the winter cuttings should be taken without further loss of time and placed in pots or boxes. An old spent melon frame is an ideal place to strike the cuttings. Keep the frame close for a time, and, of course, shade from bright sunshine.

ANNUALS.—It is well to keep an eye on the *Annals* that have suited the season for future reference. *Godetia* and *Clarkia* have made a glorious show during the past month. These, of course, were sown in frames, pricked off and transplanted into the beds during the first week of June. This month is a good time to sow again in frames for planting out in favoured situations next March for early flowering. Try various kinds for this purpose, and during winter do not coddle, but expose to plenty of air, and so keep the plants sturdy. In sheltered places many *annuals* may now be sown thinly where they are wanted to flower next spring. The ground need not be rich, but make it firm, and the growth will be all the stronger.

SHRUBS.—It is interesting to be able to propagate one's own shrubs, and this is a favourable time to start. Make up a frame of loam, leaf-mould and sharp sand, and in this cuttings of *Veronicas*, *Privets*, *Laurels*, and things of this sort will strike readily. Take half-ripened wood with a "heel" if possible. Give a good watering and keep the frame close, and shade when the sun is bright.

Chrysanthemums have enjoyed the brilliant weather. The growth is firm and dwarf. Feeding should now be liberal and varied as often as possible. Outdoor plants will require staking if not already done. We may get winds all too soon, and where they are not secured many fine plants are ruined. Give manure water if at all possible, and keep the hoe going between the plants.

The Fruit Garden.

By D. McINTOSH, Gardener to Alderman Bewley, Danum, Rathgar.

VINERIES.—Usually the worst pest subject to the destruction of ripe grapes during this month is wasps. Tiffany or fine netting is often used over the ventilators to prevent these insects getting in, but that remedy is not to be recommended, because sufficient fresh air cannot reach the vines, and the house becomes so hot that the grapes soon shrivel. A better plan is to procure several bottles, half fill them with sugar, diluted in water, and hang them up on the wires here and there throughout the house. These bottles require to be taken down from time to time to be emptied and refilled. If this is attended to when the wasps first enter but little or no damage will be done to the grapes. Young vines are sometimes so vigorous that means must be taken to check their vigour in order to get the wood ripe. This is best done by reducing the side growths gradually until all are cut back to the main one. Vines for early forcing, to be started in November, should now be pruned back to two good eyes. By pruning early, this gives the vines a more complete rest than when they are left unpruned until a later period. The loose ragged bark may be pulled off, but vine rods should never be

peeled closely. Wash the rods with Gishurst compound, according to directions. This is a safe and effective remedy for destroying insects and mildew, and does not injure the vines.

GATHERING AND STORING HARDY FRUITS.—Peaches, nectarines and apricots should not be gathered until the fruits are fully ripe, as they do not acquire their full aromatic flavour until the exact period of ripening. It is possible to preserve them for a week or ten days when fully ripe, by placing them in a cold store, where a temperature is maintained within a few degrees of freezing point. To extend the season of these fruits as long as possible, a careful selection of early, mid-season and late varieties should be made, and also by planting on different aspects. The above remarks may also be applied to plums. Plums, however, will hang somewhat longer on the trees after ripening, and but little can be done towards keeping them in store for dessert after gathering. Early varieties of pears, such as *Jargonelle*, *Clapp's Favourite*, &c., should be used almost immediately after gathering. Second early varieties, as *Beurré d'Amanalis*, *Souvenir de Congrès*, &c.; if required a few days in advance of the time at which they will become naturally ripe, may be hastened by gathering and wrapping each fruit in tissue paper and placing in a close box or drawer amongst some sweet dry hay. Pears should never be placed in the same storage as apples. The cool and somewhat moist atmosphere required by apples takes all the flavour out of pears. Pears require a warm, dry room, one in which hot water pipes have been introduced, so that the desired temperature can be maintained throughout the autumn and early winter months. Later varieties should be left to hang on the trees as long as they are safe from frost, and be careful to gather when dry and without bruising. A simple test as to their fitness for gathering is to raise the fruits gently in the hand, and if the stalk parts readily from the branch, the fruit is ripe. Another test is to cut open a fruit and examine the pips. If these are dark brown the fruit is nearly, or quite matured, but if the pips are still white, it should remain longer on the tree. If gathered too early they shrivel and become tough and leathery, and do not attain their full flavour. Early varieties of apples, such as *Early Juneating*, *Gladstone*, &c., have to be gathered and used direct from the tree. Mid-season varieties may be safely placed in the store for a short time. Late varieties should be allowed to hang on the trees as long as possible. Many people, alarmed by the falling of the fruit, gather their apples much too early. If these fallen fruits be carefully examined, most of them will be found to be maggoty and diseased. On no account introduce artificial heat into the apple storage. No anxiety need be felt if the temperature should fall several degrees below the freezing point, during a continued frost, but in such a case, when the thaw sets in, keep the room close for some time afterwards and allow the temperature to gradually rise. Any sudden change of temperature will affect the fruit more than anything else.

The Vegetable Garden.

By J. G. TONER, County Instructor in Horticulture, Co. Monaghan.

CAULIFLOWERS.—If the demand has been correctly estimated, no great number will go to loss.

In reality, of course, they are not lost, fowl and pigs consume them: it does not pay, even though eggs are scarce and pork at a high figure, to cultivate them for that purpose. For a certain short period their whiteness can be preserved by breaking down some of the inside leaves over the heads, and a desperate attempt to keep a few until the next batch has arrived can be made by pulling them up and hanging them upside down in a very cool place. When cut and placed in cold water for a few hours before being cooked they regain condition in an amazing manner. The young plants from the August sowing must be pricked out at a reasonable distance in the place where they are to remain until spring. They must be sheltered in some way during severe weather in winter.

CABBAGES.—It is not a bit of use to select and sow an early cabbage unless the plants are put out in their final quarters during this month. A detail of this kind is apt to be overlooked, while as a matter of fact it is one of the most important factors in the success of an early spring crop. In fact every available spot might be so planted. It will be a new experience for many to find that there are too many soft tender cabbages to be had in April and May. Oh, the bareness of the vegetable gardens in these months! If a large and a small variety are grown they can be so planted that as the early ones are *pulled* out the later kind has ample room to mature and provide a succession into the bargain.

KIDNEY BEANS.—Keep the pods constantly removed whether required for home use or not. There are always friends glad to accept. If seeds are allowed to get on towards maturity in the pods, the plants feel the strain and fail to continue making new pods, as they otherwise would.

TOMATOES.—Luckily enough those who put out good plants in warm positions in the open will be rewarded with fairish crops, thanks to the good weather we have been favoured with of late. Stop them at once, which just means that the growing point, for there ought not to be points, is pinched out of each plant. There is no hope for flowers setting much later producing fruit, at least useful fruit. Feed them too for all they are worth. Let clear water alternate with any good fertiliser and again before using natural liquid manure. Even the green ones, if of fair size, can be artificially ripened indoors later on.

LETTUCE.—Thin out the rows thoroughly and transplant plenty of the youngsters. Arrange, if possible, some means of protecting the most forward ones later on.

BRUSSELS SPROUTS.—The later crops require to be well attended in the matter of moulding up. They being so tall, and also carrying large heads of leaves, are otherwise unable to stand up to the buffeting of the winter winds. Scarcely any crop in the greenline fills the bill so completely during the long stretch from October to April as these, the old reliables that are always there when called on. Wherefore treat them fairly.

CELERY.—Particular attention is paid by good vegetable growers to the blanching of celery. One of the most important matters is to see that due preparation is made before any earth is placed to them. First of all the suckers or side growths are entirely removed. Next, the leaf stalks are so arranged that they entirely protect the hearts of the plants from particles of soil. And again, water in most liberal measure, followed by liquid manure, is given before the moulding up process begins. Plants and soil must be dry

too while the work is proceeding. If turf-mould can be easily procured, it is a splendid material for blanching, for while excluding the light it offers little opposition to the enlargement of the leaf stalks. Sand, too, is good. So solid has celery been lifted from a covering of fine sand that it might easily have passed for one undivided stem. Only the few favourably placed, however, can make use of these materials. A little at a time is a golden rule in regard to moulding celery.

ONIONS.—When signs that growth has become less active are apparent the stems may be bent down. This has a good effect on the swelling up process. The harvesting follows. It is not always easy to do this successfully in the absence of open sheds or other suitable places for thoroughly drying the bulbs under cover. Dried they must be, however, and that completely, else they will not keep their full term, which is most disappointing. Keep the young Tripoli onions quite free from weeds, which in some gardens at any rate are allowed to almost smother the rightful occupiers.

Forestry in China.

DEFORESTATION has played an active part on the surface of China, with the result that large forests in China proper are rare. They are met with, however, in certain districts of Central Asia, in S. E. Tibet, and in Mongolia and Manchuria. In Eastern Turkestan are to be found birch, pine, fir, spruce, larch, and poplar, while in the less favoured districts artemisia and tamarisks relieve the stretches of reeds and coarse grass that cover the steppes. In S. E. Tibet may be seen juniper, willow, pines, firs, cedars, elms and a large species of holly; while in the sheltered valleys grow wheat, barley, rice, fruit trees and vegetables. The medicinal rhubarb tree is also a native of these plateaux. The tree grows to a height of eight or ten feet and the rhubarb of commerce is its root, dug up early in spring, cut into long flat pieces and dried. Dwarf elms and willows are met with in the Gobi Desert. In Northern Mongolia and Manchuria the same trees reappear, together with oak and walnut.

Chinese timbers include pine, fir, maple, ebony, oak, camphor, teak, mahogany, birch, plane, elm. In this category may be mentioned the bamboo, which looms so largely in the everyday life of the Chinese. With it they build houses and erect temporary shelters: it is used for all scaffolding purposes, and for the transport of all goods by human agency. In early life it is used for food: when full grown it supplies the vast water population with masts, and from it are made chopsticks, pipes, umbrellas, tables, stools and musical instruments. Between forty and sixty varieties of bamboo are said to be known to the Chinese.

Among other trees worthy of mention are the varnish tree (*Rhus vernicifera* D. C.), the tallow tree (*Stillingia sebifera* Michx.), wood-oil tree (*Alnus cordata* Stend.), and vegetable wax tree (*Fraxinus chinensis* Roxb.).

China has to import timber to satisfy its own needs, nearly as much wood entering China from abroad (£539,730 worth in 1911) as is obtained within its borders for purposes of local trade through the Customs (in 1910 £641,969). Foo-chow poles (fir and pine) are the chief feature of the industry.—From the *Monthly Bulletin of Agricultural Intelligence and Plant Diseases*.

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The Cultivation of Eucalypti.

By PROF. HENRY, M.A., Royal College of Science, Dublin.

OF the 150 species of *Eucalyptus* that are known to science about a dozen can be cultivated with success in the open air in Ireland. Most of these are natives of Tasmania, only one or two coming from the mainland of Australia. None can be considered of really economic importance as a source of timber in this country; but two or three make fine trees of a noble appearance, whilst all are interesting on account of the distinctness of their foliage. The readiness with which they can be raised from seed and the rapidity of their growth render them valuable in many situations in gardens, parks and pleasure grounds. As the species vary much in their powers of resistance to low temperatures in winter, regard must be taken of this fact, and only the most hardy of the twelve species should be planted in inland parts of the country. The best known of them all, the Blue Gum, or *Eucalyptus globulus*, is rather tender, scarcely ever surviving when the temperature sinks below 17° F.

Mr. Birkbeck, who has perhaps the greatest knowledge of the genus in these islands, as he has tried during many years past about 40 or 50 species in his beautiful grounds at Kinloch Hourn, on the west coast of Scotland, is of opinion that *E. vernicosa* is the hardiest of all the species. He considers *E. Gunnii*, *E. coccifera*, *E. cordata*, and *E. urnigera* to be quite hardy. Both *E. viminalis* and *E. pauciflora* are more tender than *E. globulus*. At Abbotsbury in Dorset, where also a great number of species have been tried in the open air, all succumbed in the cold winters of 1907 and 1908, except *E. coccifera*, *E. cordata*, *E. Gunnii*, *E. Muelleri*, *E. vernicosa*, and *E. urnigera*. To this list of the hardier kinds may be added the remarkable hybrid, *E. Whittingehamensis*, which is possibly more robust than any that we have mentioned.

Before giving an account of the different species, I may say something about their cultivation in general. Mr. Birkbeck's rules for propagation are as follows:—Raise them from seed under glass; pot when 2 or 3 inches high: re-

pot often, as they never do well after their roots are pot-bound. Give them some bone-meal, keep under glass till 3 feet high, and plant out in good soil in May or June when about two years old. Keep them well staked, as they are easily blown down, but keep the fastenings loose, as they increase in girth quickly.

It will be found, however, that in Ireland the seedlings of the hardy species may be treated exactly like those of Pines or ordinary Conifers. They may be raised in boxes or frames, and should be transplanted into the nursery when about 6 inches high, in order to promote the formation of root-fibres. Seedlings ought to be transplanted only in cool, cloudy weather, and be watered for some days afterwards.

The requirements as to soil of the different *Eucalypti* have not been studied, but they do not seem to be exacting. At Rossdohan, Kerry, all the species grow as well in peat as on gravel, being more easily blown down in the latter soil, according to Mr. Heard.

All the *Eucalypti* are typical light-demanding trees, being injured by the slightest shade, and never thrive when planted out in corners under the shade of other trees or when placed close to high buildings or walls. It must be, however, remembered that they are easily broken or uprooted by gales; and advantage should be taken of glades and clearings in woods, or of similar sheltered situations, to give them sufficient light and at the same time protection from the south-west wind. Like all other trees, they must, of course, be protected from stock and rabbits.

The species usually cultivated are not difficult to distinguish, even in the absence of flowers and fruits; and cultivators who are likely to handle them can avail themselves of the key which I have given to their identification in *Trees of Great Britain*, Vol. VI., p. 1617.

I will now give a few notes on each species, making special mention of good specimens growing in Ireland.

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The Blue Gum, *Eucalyptus globulus*, is so well-known that I need not dwell on its peculiarities further than to repeat that it is rather tender and is unsuitable for many places. The oldest Blue Gum in the British Isles is growing at Garron Tower on the coast of Antrim. This tree, which was planted in 1857, measured in 1911, 75 feet in height and 13 feet in girth at 4 feet above the ground, dividing above this level into two stems. It produces flowers and fruit regularly; and from its seed numerous seedlings have been raised. There is a taller tree on Dinas Island at Muckross in Kerry, which was 77 feet by 6½ feet in 1909. This was severely injured by the hard frost of 1879, when it was cut to the ground, the present stem being one of two shoots which sprouted subsequently from the stump. At Dunran, Co. Wicklow, a well-shaped specimen was 49 feet high in 1904, and of this an illustration is now given. There are several good trees at Killiney and other places of which I have not exact measurements.

E. Gunnii, possibly the hardiest species, is little known in Ireland, but young trees may be seen at Avondale and Kilmacurragh in Wicklow. It has been largely planted at Brightlingsea on the coast of Essex, where it thrives on an exposed site in light sandy soil, some of the trees having attained 50 feet in height and 4 feet in girth at 24 years old. Others have done well in heavy, marshy clay soil that had been trenched. These trees have been quite uninjured by wind or frost, the lowest temperature recorded being

5° F. *E. Gunnii*, being very cheaply propagated, might be tried as a wind-screen on both sandy and peaty soils in the west of Ireland near the sea. It is a native of swampy situations at 3,000 to 4,000 feet elevation in the centre of Tasmania, but is not esteemed for its timber.

E. coccifera is nearly, if not quite, so hardy as *E. Gunnii*, and is much handsomer, owing to the dense white bloom on the twigs, which often extends to the leaves, buds, &c. It is thriving and perfectly hardy at Kilmacurragh and Mount Usher. The Rev. W. W. Fleming has a fine specimen at Coolin, near Portlaw, Co. Waterford, which though planted out quite small in 1898, had attained 35 feet high in 1907, when it was figured in *The Garden*, LXXI., p. 591. This species is a small tree, a native of the mountains of Tasmania, where it is of no economic value.

E. urnigera is another hardy species, equalling the Laurel in this respect, according to the late Earl Annesley; but in some places it has suffered greatly from frost when in a young stage of growth. It has attained 80 feet in height at several places in England and Scotland, and there was formerly

a tree 65 feet high at Castlewellan. There are small specimens at Mount Usher which were raised from seed in 1904, yet bore fruit in 1911. So far as we know this species is of no value for timber in its native home in the mountains of Tasmania; and it is not so handsome in cultivation as the two preceding species.

A remarkable tree growing at Whittingehame in East Lothian, and known as *E. Whittinge-*



THE BLUE GUM (*EUCALYPTUS GLOBULUS*) AT DUNRAN, CO. WICKLOW.

hamensis, is supposed to be a hybrid, as it partakes of the characters of both *E. Gunnii* and *E. urnigera*. It is extremely large, being 65 feet high and 13½ feet in girth, though it was killed to near the ground in the severe winter of 1860. It was raised from seed collected in Tasmania by the late Marquess of Salisbury about 1851, and produces seed regularly, from which numerous seedlings have been raised. These vary somewhat in their foliage, and are as a rule very thriving and perfectly hardy plants. One of the oldest may be seen in the Rose Garden near the Pagoda at Kew.

E. Muelleri * is a rare species, which is said to attain 200 feet in height in Tasmania, on the range dividing the Huon and Derwent watersheds at 2,000 feet altitude. Mueller, the great authority whose name it bears, stated that it is the only Eucalyptus of large size and with good timber which bears frost. Whether it will ever have any economic value in Ireland is doubtful; but it is satisfactory to know that the two finest specimens in Europe are growing in a plantation at Derreen in Kerry. These beautiful trees were in 1911 about 60 feet in height and 4 feet 3 inches and 5 feet in girth. They were planted in 1880, and are growing in soil which the Marquise of Lansdowne describes as being almost pure peat. As showing their rapid growth two Conifers near them which were planted in 1878 are the same height, 60 feet—one, *Cupressus macrocarpa*, girthing 6 feet 10 inches; the other, *Tsuga Albertiana*, girthing 5 feet 1 inch. This species is probably not quite so hardy as *E. urnigera*, which it resembles in foliage, but is a much finer tree. The seeds must be procured from Tasmania, as the species is not known to any of the dealers in tree-seeds.

E. vernicosa is the dwarf Alpine representative of *E. Muelleri*, growing on the summits of the higher Tasmanian mountains, and scarcely ever surpassing 20 feet in height. Mr. Birkbeck states that it is the hardest species, forming a beautiful shrub and not developing into a tree. It occurs in a few Scottish gardens, but I have never seen a specimen in England or Ireland. It is highly ornamental, and well worth growing in our gardens.

E. pauciflora, also known under the synonym *E. coriacea*, occurs both in Australia and in Tasmania. In cultivation it forms a tree with very pendulous branches and abundance of flowers (in direct opposition to the name bestowed on it). It does not appear to be always hardy, but this doubtless depends on

the locality whence the seeds are derived. An old tree at Fota is about 50 feet high by 6 feet 8 inches in girth. This is one of the numerous kinds grown at Rossdohan.

E. viminalis is a widely spread species, occurring in Tasmania as a small tree, but reaching an enormous size in Australia. It has behaved differently in various places as regards the degree of cold which it will bear without injury; but in all probability this depends, as in the case of the last species, on the locality where the seeds are gathered. It has grown very fast at Mount Usher, where a tree raised from seed in 1904 was 28 feet high and bearing fruit in October, 1911. There are larger specimens at Rossdohan.

E. cordata, from Tasmania, and *E. pulverulenta*, from Australia, are closely allied,* and are peculiar in the fact that they retain in the adult stage the opposite leaves—without stalks, cordate at the base, and spreading horizontally, which are characteristic of the youthful stage of all Eucalypti. The other species after a time change their foliage and bear alternate leaves which are stalked and hang vertically. Leaves of this kind are never seen on these two species. *E. cordata* is a handsome species, flowering early in life, and never attaining a great height. A specimen at St. Anne's, near Dublin, which was planted out in 1904, has passed through one of two severe winters, and was 20 feet high in 1909. There are also trees at Rostrevor and Castlewellan. *E. pulverulenta* is probably less hardy; but there are specimens at Kilmacurragh, Mount Usher, and Castlewellan which have not suffered from frost as yet.

E. Beauchampiana was raised at Truro by Messrs. Treseder from seed obtained direct from New South Wales, and is identical with the Apple Eucalyptus of that region to which Mr. Maiden applies the name *E. Stuartiana*. It is not very hardy, and was killed at Wisley in 1908–1909, when the temperature fell to 7½° F. There is a tree at Mount Usher, 20 feet high and bearing flowers in October, 1911, which was raised from seed obtained from the Sydney Botanic Garden in 1904.

At Rossdohan, Co. Kerry, a considerable number of other species have been tried, and amongst these *E. stellulata* produced flowers and fruit. This wonderful garden is, however, so exceptional in the mildness of its climate as to be no criterion for Ireland generally; and I have confined my remarks to the species which are either perfectly hardy or which will grow at any rate in most districts near the sea.

* Described by T. B. Moore in 1886, and to be distinguished from two other species of the same name, which were described by Miquel and Naudin.

* *E. cordata* has quadrangular twigs and nearly orbicular crenate leaves, both the twigs and leaves being roughened with prominent oil-glands. *E. pulverulenta* has round smooth twigs and smooth ovate entire leaves.

Planting in Uganda.

By E. BROWN, F.L.S.

PARA RUBBER, COFFEE AND COCOA.

THE planting industry of Uganda should be of particular interest to readers of IRISH GARDENING owing to the fact that the principal companies operating there are Dublin concerns.

The first plantation to be floated from Uganda was floated in Dublin, and we believe we are right in saying that this was the first record of such a flotation in Dublin.

RUBBER (HEVEA BRAZILIENSIS)—The rubber tree is propagated entirely by seed. These, like most seeds of an oily nature, quickly lose vitality after attaining ripeness, and must therefore be sown as soon as procurable. In the early days of planting in Uganda seeds had to be procured from Ceylon, and heavy losses were suffered by the early planters owing to failure of many of the seeds to survive the journey. We have, however, reached the stage when a plentiful supply of seeds is obtainable in the country, so that such expenses and disappointments are no longer experienced.

The Para seeds are sown in beds about 3 inches apart and 2 inches deep. They are then shaded and watered. Germination commences in about twenty-one days. As soon as germination has taken place and before the radicle has made any considerable growth, the young plants are put into pots or baskets. The receptacles generally used are circular-shaped pots made from the sheathing leaf-stalk of the banana. These pots are cheaply made—one workman making 100 per day—and they are efficient for their purpose for a period of about six months, by which time the Para tree is ready for planting in the field.

The land usually broken up for planting is

that under a dense growth of "Elephant Grass" (*Pennisetum setorum*). This grass grows to a height of 10 feet, and is regularly burnt off every year in the dry season. It has been the only growth on the land for generations, and consequently the soil is very rich and fertile.

Clearing consists of cutting down the grass close to the ground and burning it when dry. The land is then hoed up to a depth of about 1 foot, and the rhizomes of the grass removed and exposed to the sun to dry. The land is then ready for lining and hoeing.

The distance of planting Para rubber now usually adopted is 20 feet by 20 feet, or 110 trees per acre. The holes are usually dug several months before required for planting to enable the rain to thoroughly soak the sub-soil. Planting must be done in the rainy seasons, of which there are two each year. The Para plants, still in the banana pots, are carried to the field and planted as they are, pot and all. Subsequent work in the field, for five years, until the trees are ready for tapping, consists of weeding, slight pruning, supplying vacancies, and combating pests, insect and fungoid.

After five years'

growth the rubber trees are of a height of about 25 feet. They have a clean straight bole of 6 feet, which is the tapping area. Their girth at this age is about 16 inches, at 3 feet from the ground. This is the size at which trees are considered tappable, and at intervals the fields are gone over and trees reaching this girth are marked for tapping.

The usual system of tapping young trees is that known as the basal V. This consists of two oblique cuts, each made at an angle of about 45° and meeting at the base. The cut is made at a height of 18 inches above the ground. It extends only over a quarter of the circumference of the tree, which, assuming each quarter



Photo by]

[E. Brown.

PARA RUBBER TREES,
5 years old, on Kivuvu Estate, Uganda.

section to last a year, will thus last four years on the original bark, by which time the first section will have renewed its bark and be ready to work again.

Special knives are used for tapping. The one used in making the first cut has a three-sided cutting edge which completely removes a piece of bark, leaving a narrow channel extending almost to the cambium layer of the wood. In subsequent tapping a different tool is used—one having but two cutting edges, and known as a paring knife.

The lower edge of the opening cut is the part tapped. A very thin slice of the bark is cut away which re-opens the wound and causes the latex to flow. This operation is repeated every alternate day, a tree thus being tapped about 150 times a year. The latex flows down the oblique cuts and gathers at the point of the V, at which place a piece of tin is inserted to guide it into a cup which is placed underneath.

A remarkable feature of the rubber tree is its response to wounding. A new tree on first being tapped gives no flow of latex, but regular tapping induces a flow which increases each time, until at about a month from starting the tree is giving its maximum.

It will be gathered that this continual paring of the lower surface of the cut means in time a large removal of bark. The latex vessels are situated in the inner layer of bark next the cambium, and tapping has to be down to the cambium to get the latex, but not into it, or the tree is injured. The wounding is always thus being carried farther down the tree, and healing should be following up close behind it. The removal of bark must not be at so rapid a rate that healing cannot keep pace with it. The division of the tree into sections is to ensure the bark lasting a given number of years. Fortunately, the removal of a very thin shaving of bark is sufficient to open the wound, and it results in as much latex as a thick shaving.

As the tree gets bigger other V cuts are put above, and they are then joined together by a vertical channel running through the points. A system of several V's joined together is known as a "herring bone" system.

(To be continued.)



THE EDUCATIONAL COMPANY, Dublin, have in the press a book dealing with the subject of planting and growing of the various crops which may be profitably grown in Uganda. The author, Mr. E. Brown, F.L.S., has a long experience in the country, and was formerly Assistant Director of the Forestry Department at Entebbe, Uganda, and is now manager of the Kivuvu Rubber Company, so is well qualified to deal with this subject.—ED.

Shrubs for Forcing.

So accustomed are we to bulbs of various kinds for use in providing a spring display indoors that we are apt to overlook many kinds of woody subjects of equal beauty and utility. A few shrubs, such as Azaleas, Deutzias, and occasionally Lilacs, are certainly in fairly common use, but still there is a host of hardy outdoor shrubs which flower naturally in the spring months which, with very little trouble, can be induced to flower in the warm greenhouse while outside conditions are still the reverse of spring-like.

All early spring flowering trees and shrubs flower on spurs or shoots which have been made and matured the previous summer and autumn. All they have to do then is to wait for the genial showers and rising temperature of spring. These conditions have to be produced artificially when it is desired to force our shrubs into flower before their natural time. Consequently it is necessary to bring them indoors, and the best way to do this is to have the shrubs potted or put in tubs or suitable pots the previous autumn. Then they may be plunged in reserve quarters and brought in as required. It is well to use a good compost, such as would be used for fruit trees, in pots, and with ordinary cultural care, such as an annual top-dressing and careful watering, some subjects may be forced for several years ere they require repotting or planting out again. Needless to say it is unwise to submit them to too much heat when first brought in. The temperature of a vinery which is being started in January would provide ideal conditions at first, while in a few weeks, when the buds are beginning to burst, a higher temperature soon brings them into flower. This would follow naturally in the vinery, but it is just at this stage they should be moved to the greenhouse or conservatory, where the genial atmosphere maintained for bulbs, &c., will suit the shrubs admirably. Later in the spring progress is more rapid, and it is difficult to keep back the earliest flowering kinds, so that a cool house shut up early to retain the sun-heat will be sufficient to stimulate the flower buds into action. It is important that too much heat be not applied at first or many of the flower buds will fail to open and young growths will appear instead. Gentle syringing with tepid water has a beneficial effect, but this may be discontinued while the shrubs are in flower. The earliest subjects which flower on shoots of the previous year must be pruned hard back when the flowers are over, otherwise they will soon get too large. They must then be returned to a house, from which frost can be excluded, to make

their growths for another year. When growth is completed and the plants carefully hardened off by giving abundance of air they may be plunged outside to get thoroughly ripened up before winter.

Pyruses, some of the Prunuses, Laburnums and Wistarias, which flower on spurs, will require just the same treatment as orchard-house trees. Pinching and thinning of the young growths must be regularly practised to ensure the formation of spurs.

It will be obvious that as the pots get full of roots, feeding will have to be done, otherwise the growths will get weaker each year and incapable of flowering. Basic slag sprinkled on the surface in autumn is a safe and effective manure, while well diluted liquid from the cow-shed is effective in spring, when the young shoots are growing. Later on light dressings of superphosphate help to firm the wood and plump up the flower buds. Heavy doses of any manure should never be applied—little and often is the safe rule, and this only when the receptacles are well filled with roots.

A word might be said about early-flowering evergreens for forcing. These are not numerous and belong chiefly to the Rhododendron family. They differ slightly in their requirements from deciduous subjects, and require generally a compost of peat a little leaf-mould and enough sharp, clean sand to keep the compost sweet and open. Good fibrous loam, free from lime, may be mixed with the peat, especially if the Rhododendrons have been grown in loam. A beautiful early flowering species is *R. nobleanum*. It flowers outside in January when the weather is mild, and therefore there is no difficulty in having a beautiful display inside at that time, or even earlier, and the blossoms develop much better under glass. The pretty little *R. racemosum* would, no doubt, make a nice show in the greenhouse, and others of hybrid origin like *Doncaster*, *Cunningham's White* and *Rosa Mundi* would be worth a trial.

Deciduous subjects are more numerous and will be found mostly among our spring and early summer flowering trees and shrubs.

The *Amelanchier* or *Snowy Mespilus* forces readily and bears abundance of white flowers, which, however, are somewhat fleeting.

In the Peach family (*Prunus*) there are several subjects of great beauty, notably the double varieties of *Prunus persica*. All are lovely, and special mention may be made of *P. persica Clara Meyer*, a beautiful pink, which may be rather lighter in colour when flowered inside. *P. pseudocerasus*, the popular double cherry, is beautiful in the greenhouse; *Waterer's variety* and *J. H. Veitch* are two of the best. *P. triloba fl. pl.* and *P. japonica fl. pl.* are pink

and white respectively, and make a charming display when forced.

The early flowering shrubby *Spiræas* are useful and easily brought into flower. Most of the species have been described in former issues under the tree and shrub notes. Some of the best are *Spiræa Thunbergi*, *S. arguta*, *S. trilobata*, *S. Van Houttei* and *S. prunifolia fl. pl.*

Wistarias and *Laburnums* are of similar habit, and are generally grown as standards, 4 to 5 ft. or more high. In this way their pendulous racemes of blue or white and yellow flowers are displayed to the greatest advantage, and never fail to enlist a host of admirers.

Tree *Pæonias* are, of course, fairly well known, and seldom do so well as when pot grown and flowered indoors. Their large, handsome flowers are exceedingly attractive, and at once attract attention.

Forsythias, too, which flower naturally very early, are easily induced to flower quite early in the year. The best, and most graceful is *F. suspensa*, which is also the best outside species.

The flowering *Taurant* develops remarkably fine flowers in the greenhouse, and will flower when quite small, while a useful yellow flower is the double *Kerria japonica*.

Nothing need be said here about *Deutzias*, as their requirements are well known to gardeners, and no better specimens could be wished for than those shown annually at the R. H. S. Spring Show in Dublin. Perhaps though one might suggest a trial of the newer hybrid varieties, such as *D. campanulata*, *D. kalmiae-flora*, *D. Lemoinei*, &c. These have larger flowers than *D. gracilis*, and make a very fine show where they do well outside. *Deutzia crenata Pride of Rochester* should make a handsome greenhouse plant.

There are one or two shrubby *Pyruses* which can be readily forced, notably the free and beautiful *P. floribunda* and its hybrid *P. Schiedeckeri*, both with pink apple-like blossoms.

Hard and fast rules cannot be laid down regarding cultural treatment to suit all the shrubs mentioned when grown for forcing. Some, as stated, may be forced for several years, others may require to be planted out to recuperate, while the amount of pruning necessary will be regulated by the amount of growth made and the natural habit of the plant.

The gardener who once gets together a set of shrubs for forcing will soon find himself as keenly interested in keeping them up to the mark as he is in his fruit trees, and where large conservatories have to be furnished in spring he will find them of great value.

Sweet-scented Leaved Pelargoniums.

By MISS H. M. WHITE, LL.D.

EVEN in the garden we do not escape from the tyranny of fashion, and in obedience to its dictates plants rise and fall in popular esteem. During the years 1820-30, when Sweet published his excellent book on the Geraniaceae he was able to describe some 500 Pelargoniums—a feat which few growers of the present day would care to be called on to emulate. Although scented-leaved Pelargoniums failed for many years to find a place in greenhouses, they seem always to have been cherished as cottage plants and to have been loved by the poor. George Eliot in "Janet's Repentance" speaks of a scented Geranium giving forth its wholesome odour in the midst of a noisy pot-house, and in the tiny window of many a poor and squalid little room, the one spot of greenness and the sole breath of fragrance are supplied by a lanky plant of "Capitatum," the beloved "Oak Geranium" of the poor. Miss Brennan tells me that a cottager in her neighbourhood has a very old plant of *Odera Rosea* which she brought many years ago as a cutting from America, and which has now a stem almost as thick as a small tree. The sweet-scented leaves of these Pelargoniums when sent to hospitals seem to give almost more pleasure to the patients than flowers, their only formidable rivals in popular favour being "Lad's Love" and the "Lemon-scented Verbena."

An admirable article on sweet-scented leaved Pelargoniums appeared in the October, 1911, number of the Journal of the Royal Horticultural Society, contributed by Miss Troyte Bullock and Miss E. V. Brennan, both well-known growers of these plants, and readers who desire an exhaustive treatment of the subject must be referred to it. A difficulty which confronts the collectors of these plants at the outset is the hopeless confusion of the nomenclature. Miss Hope, a grower of sweet-scented Pelargoniums, writing more than thirty years ago, makes the same complaint in her delightful book "Gardens and Woodlands": the names of the scented Pelargoniums were then in a muddle, and they have remained so ever since. The matter is now receiving attention at Wisley, the gardens of the Royal Horticultural Society, so we must hope that some sort of order may at last be evolved out of the existing chaos. I make no claim whatever to speak with authority on the matter. I give the varieties the names under which I grow them, but I, alas! feel no certainty that these names are right. The synonyms are sorely perplexing, also the fact that widely different varieties are grown under the same name. To take such a well-known variety as "Peppermint," Miss Hope speaks of it as "Lobatum"; Sweet describes "Lobatum" as the "Cow Parsnip-leaved Stork's Bill," a plant differing widely from "Peppermint." Plants sent to me as "Pilosum," "Tomentosum," and "Mrs. Seymour" have all proved to be my old friend "Peppermint." "Lady Mary Fox," an almost equally well-known variety, has as synonyms "Mrs. Moore," "Moore's Victory," "Altum," "Mr. J. Douglas," "Old Irish." Then again two extremely different plants are grown as

"Duchess of Devonshire." I grow a rather coarsely cut glutinosum—"Viscosissimus" I believe it is generally called; others grow as "Duchess of Devonshire," a plant more nearly allied to the Crispums. Two entirely different varieties are also grown as "Lothario."

Miss Brennan in the article above referred to has divided the scented Pelargoniums into three main groups—

- I. Capitatum section.
- II. Crispum section.
- III. Quercifolium section.

after which she places the Uniques, and in yet another section a large number of distinct varieties that cannot well be included in any of these groups. It is well to remember this classification, but for the ordinary gardener these Pelargoniums may, perhaps, be more usefully divided into:—

- (a) The most effective—with good flowers.
- (b) The sweetest.
- (c) The best for cutting and arranging with flowers.
- (d) Distinctive varieties.

GROUP A (with most effective flowers) would include:—*Agnes*; *Andersonii*; *Balbisianum*; *Betulafolium*, white, very effective if grown as a large specimen; *Claret Rock*; *Cucullatum*, single and double form; *Chit Chat*; *Clorinda*, a continuous flowerer, most effective; *Dale Park Beauty*; *Didematum*; *Lady Mary Fox*, scarlet very good; *Lady Mary*=*Hirsutum*; *Lothario*, my variety; *Miss Brennan's variety*; *Mons. Nonin*; *Mrs. Earle*; *Mrs. Douglas*; *Painted Lady*; *Pretty Polly*, one of the most popular; *Rapaceum*; *Scilly Isles*; *Schottisham Pet*; *Shrubland Rose*, very good; *Toronto*.

The Uniques.—*Purple Unique*=syn. *Bellevue Seedling*=syn. *Chippenham**; *Scarlet Unique*; *White Unique*; *Rollisson's Unique*; *Conspicuum*; *Mrs. Kingsbury*.

GROUP B (the sweetest).—*Attar of Rose*; *The Crispums*, all these are good. There are some eight different varieties. *Crispum Minus*, a little gem, deliciously sweet; "*Bridal Ring*" extremely sweet; *Lady Scarborough*, one of the sweetest; *Prince of Orange*, large flowers, very sweet; *Princess of Orange*, large flowers, very sweet; *Rudola*, a small lemon-scented *Capitatum*. Varieties with strong and peculiar scent, liked by some people and disliked by others, are:—*Peppermint*; *Turpentine*=*Fragrans*; *Beauty*; and *Mrs. Meredith* † which seem to have some of the Peppermint strain. *Blandfordianum*=*Lady Betty Germaine*, grey leaves, distinct scent.

GROUP C (the best for cutting and arranging with flowers).—*Capitatum*, all the various forms; *Graveolens Variegatum*=*Lady Plymouth*; *Fair Ellen*=*Sweet Helen*; *Filiicifolium*=*Graveolens*; *Pheasant's Foot*; *Radula*; *Sandbach Beauty*; *Wintona picturata*=*Vandesi*, *Chiswick Beauty*=*Major Clarke*. The *Crispums* belong as much to this group as to Group B. They are very sweet and they are good for cutting.

GROUP D (distinctive varieties, not always with sweet-scented leaves, but generally classed with these varieties).—*Abrotanifolium*, like "*Lad's Love*," very sweet, might also be placed in

* The *Purple Uniques* are difficult to decide definitely about. Miss Brennan and I class them a little differently. She makes *Chippenham* distinct, and makes *Conspicuum* as a synonym of *Purple Unique*.

† This applies to the variety that I grow as *Mrs. Meredith*. There are other plants grown under this name, I believe.

Group B; *Alchemilloides*; *Ardens*; *Artemioides-Albescens*; *Cordatum*; *Cotyledonis*, very distinct; *Echinatum Album*=Moulton Gem; *Echinatum rubrum*=Ariel; Fair Rosamond=Fair Emily (not the plant figured by Sweet, the flowers in his plate are white and large, with carmine blotches on the upper petals, while mine are small and a dullish pink); *Gibbosum*, *Glaucum*, and *Glaucifolium*, probably synonyms—my plants are too small to decide; *Kimberley*; *Multibracteatum*; *Ionidiflorum*; *Punctatum*; *Saxifragoides*; *Saniculaefolium*; *Schotii*; *Ternatum*; *Tetragonum*; *Tricolor*, *Triste*, and *Mrs. Gaskell*.

My classification has led to a large extent to the omission of the *Quercifolium* section: these varieties are, however, well worthy of mention. The flowers for the most part are unattractive in colour, but the varieties are handsome for bedding out, and the markings on some of the leaves are very black and distinct: *Q. Majus*, *Minus*; *Miss Davidson*; *Stag's Horn*; *Lady Lumsden*; *Tetrapetalum*; *Mr. Acton*, specially broad, very dark markings; *Denticulatum Majus*.

The reasons usually assigned for the disregard of sweet-scented leaved *Pelargoniums* are three:—

- (1) Their flowers are insignificant.
- (2) They are hard to grow.
- (3) They are specially subject to greenfly.

As regards (1) a very slight acquaintance with the varieties that I have placed in Group A will suffice to prove that this accusation is a calumny. Some varieties, such as *Capitatum* and *Attar* of *Rose*, have poor and inconspicuous flowers, but the fragrance of their leaves amply compensates for this defect. (2) The majority of the varieties are not difficult to grow; some few varieties such as *Ardens* and *Echinatum*, need a certain amount of drying off, and others, such as *Schotii* are hard to propagate. *Tricolor* is perhaps best treated as a biennial, but most of the varieties are perfectly easy to grow. (3) As regards their being specially subject to greenfly, I am afraid that personally I am not prepared to deny the charge. I, however, know growers who do not admit it, and who say that the scented leaved *Pelargoniums* never show greenfly with them, even when other plants are troubled with it. Surely, however, it is a gardener's business to keep his plants clean, and it is not difficult to do so if they are fumigated and syringed when the greenfly begins to appear.

Two very interesting articles appeared in the July and August numbers of this year of "The Perfumery and Essential Oil Record," by E. M. Holmes, F.L.S., Hon. F.R.H.S., on the special odours which are distilled from the different scented leaved *Pelargoniums*. He says that at Grasse, so far as can be judged, the plant, used for distillation is *P. Capitatum*; *P. Radula var. roseum*—which he evidently regards as being identical. He then adds that the rooted cuttings are planted out in rows in fields in April, that they grow three or four feet high, and that leaves, stems and flowers are all put into the still for distillation. He has carried on a series of experiments himself and he gives a list of the odours which the best known varieties yield.

CULTURE.—Most of the varieties root easily from cuttings, and many of them can also be increased from pieces of the root. They should be grown in light, rich soil, and cut down after they have flowered.

Scented-leaved *Pelargoniums* have for some of their possessors a special value owing to the fact that it is not possible to procure them for money. A representative collection cannot be ordered from a nurseryman, it can only be built up slowly by exchanges with friends or by gifts. Visits to out-of-the-way foreign flower markets sometimes prove fruitful, and it is always desirable to scrutinise closely, both at home and abroad, the plants in cottage windows.

A collection so formed must have associations, an individuality, and an interest which plants ordered from catalogues or from a nursery can never possess.

October Fruit Show.

FRUIT growers generally, and especially those interested in the economic side of fruit growing, will find much to interest them in the Schedule of Prizes for the Royal Horticultural Society's great show of Irish fruit to be held at Ballsbridge on 22nd and 23rd October next. It is two years since the last fruit show was held, and it will afford opportunities to note what progress has been made in fruit growing in Ireland during these two years. Every effort has been made by the Council of the Royal Horticultural Society to bring this schedule up-to-date, and to frame it on as liberal and as wide a scale as possible, so as to meet the requirements of all classes of exhibitors. There are 71 classes for fruit in collections and in single dishes, and 17 classes for vegetables. In several of these classes there are protective restrictions in favour of new or amateur exhibitors. The assistance of the Department of Agriculture has been generously and willingly given in the packing classes, classes for preserved fruits, and others, and some practical and interesting conditions have been made. The classes for fruit packed for market are well worthy of consideration. There are nine such classes for barrels and boxes of apples, dessert and culinary, and to ensure the objects of the competition, the packages must reach the show *via* Chester, the Society undertaking to pay the cost of transport from Chester to the show. These packages will be judged by an expert market salesman from one of the large Cross-channel markets, and judging will be by points, as shown in the schedule. The Department of Agriculture has arranged for a very interesting demonstration in fruit packing for market, which will be given on both days of show. An important conference will be held on the first day of the show, from 3 to 6 in the afternoon, and from 7 to 9.30 in the evening, particulars of which will shortly be available. The Vice-President of the Department of Agriculture will take the chair at both sessions, and all the papers read will be by practical men who are actively engaged in growing fruit. In the afternoon the papers include "Apples for Market, Varieties and Cultivation"; "Berry and Bush Fruit for Market, Varieties and Cultivation"; "Marketing Fruit." The papers to be read in the evening include "Insects Injurious to Fruit Crops, How Best to Combat Them"; "Fungi Injurious to Fruit Crops, How Best to Combat Them"; "A Practical Farmer's Experience in Fruit Growing."—F. W. MOORE, Hon. Sec., R.H.S.

Hardy Stonecrops.

BY R. LLOYD PRAEGER, B.A.

IN the minds of some rock-gardeners I think there is rather a prejudice against Sedums. No doubt this arises from the fact that a few of the more rampant ones, such as *S. album* and *S. rupestre*, are very common in gardens. They increase quickly, are difficult to keep in check, since every loose scrap will take root and grow; they have in consequence got into the gardener's black books by smothering some of his treasures. But there are few genera which, taken as a whole, are more valuable or more decorative in the rock-garden, and the majority of them are modest plants not venturing, at least for some years, outside

their allotted space. Apart from the profusion of blossom which characterises them, and the handsome appearance of many of the species, the quality which renders them specially valuable is their remarkable power of resisting drought, and of flourishing in the driest and poorest of soils. They come of a natural order—the Crassulaceae—distinguished for its drought-resisting qualities, and their allies, the *Sempervivums*, even surpass the Sedums as regards this power. The device by which they attain this quality is the same all through the order—namely, by a remarkable thickening of the leaves or stems, coupled with the development of a waterproof skin, which converts them into veritable cisterns. Take some leaves of the common *Sedum album* and weigh them; weigh them again after the water which they contain has been dissipated by drying, and you will find that they weigh only one-tenth of what they did at first. The leaves of the larger *S. dendroideum* are more efficient still, and nineteen-twentieths of their weight actually consists of water. No wonder that drought does not inconvenience them, with such a supply ready for an emergency.

The Sedums are essentially a rock-garden genus, while a few of the larger species, such as the valuable *S. spectabile*, are often grown in the front of the border; as a whole they look best and grow best under rock-garden conditions. While the prevailing habit is prostrate, some of them

are tall and stiff. As to colour, the flowers range from white through pink to deep claret-red; many are bright yellow; one or two are green; and one delightful species—unfortunately an annual—is sky-blue. The colour of the foliage, which in almost every case is evergreen, varies considerably, and adds to their decorative effect; it ranges from pale to dark green; there are various effective purple hues; many are blue-grey and glaucous; and some take on a crimson tint when grown exposed. As regards time of flowering, the Sedums do not begin very early, but they make up for that by going on far into the autumn; the earlier species begin blossoming in June; the latest do not flower till September, and last well into October. When the rush of bloom is over the Sedums join the Campanulaceae in keeping our

rock-gardens bright during the later summer months. The ease with which almost every member of the genus is propagated is another solid point in their favour. With many of them, if they are forgotten in one's pocket for a week, it really does not matter!

On the other hand, a disadvantage, so far as the serious gardener is concerned, attaches to them on account of the confusion which exists, especially among nurserymen as to their nomenclature. Erroneous and often impossible names figure in many growers' lists. The nurserymen are not to blame—at least no more than the persons who buy from them and pass on the false names to their neighbour. Both seller and buyer use the name under which the plant was

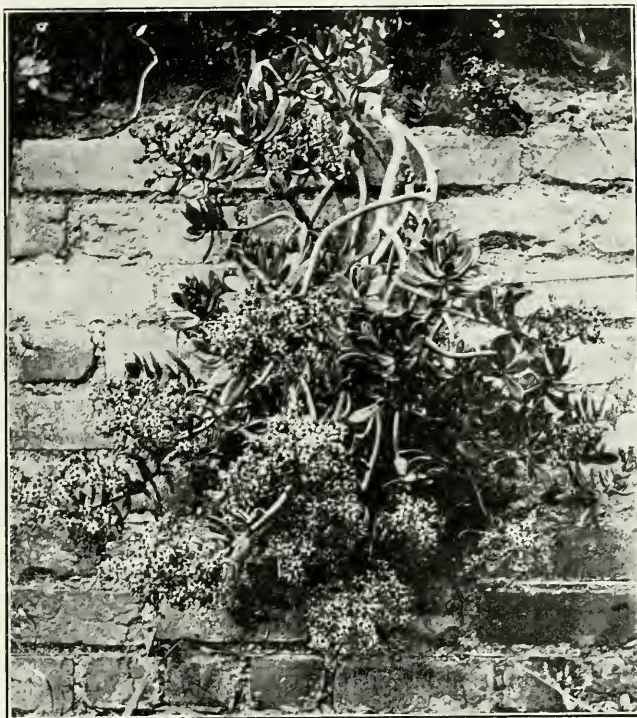


Photo by]

[C Richardson.

SEDUM DENDROIDEUM, a native of Mexico, with yellow flowers in June, growing in Mr. R. McM. Smyth's Garden at Mount Henry, Dalkey, on a brick wall, and hanging down 3½ feet.

received, and no handy book exists by which the names may be checked and corrected. In my own bit of rock-garden I have or have had about 150 species and varieties of Sedums; nearly half were received under either erroneous names or under no name at all; and I must confess that many of these remain so still. Some sections of the genus are puzzling, with many closely allied forms; and to run these down from existing literature is by no means easy. However, all the more distinct and notable species are well known and easily recognised, so to the average rock-gardener these difficulties do not arise.

In the following notes a brief summary of the leading species is given, followed by a grouping of species under headings to help the reader to

select species required for any particular purpose. We have in the first place the small creeping species, of which the native *S. anglicum* and *S. acre* may stand as types. These have generally either yellow or white flowers, the white-petalled species, as in other groups of the genus, having often pinkish flowers owing to the red colour of the stamens and ovary. *S. acre* and *S. sexangulare* are the leading yellows of this section, but forming mats which are a sheet of bright colour in July. While *S. sexangulare* has linear leaves in six spiral crowded rows, the leaves of *S. acre* are fewer and triangular in shape, having a very broad base. *S. Maweanum*, a rather shy grower, resembles a large *S. acre*, and has characteristic pale green foliage. *S. amplexicaule* is a tiny plant which loses its leaves in summer, presenting only a short thread-like stem terminating in a torpedo-shaped grey bud. *S. multiceps* resembles several of the foregoing in leaf and flower, but grows like a tiny bush, with many divergent branches. Of the white and pink-flowered Sedums of this section, *S. album* is very common, with little fat, bolster-shaped leaves and a great abundance of flowers. The native *S. anglicum* is a smaller plant like the last, brightly tinged with red in the foliage when starved or exposed. *S. dasyphyllum* is quite choice, with tiny much swollen leaves of a glaucous hue and white flowers. *S. Lydium* is smaller still, with bright green foliage, also with a ruddy tint when exposed. *S. murale* is a valuable plant, the counterpart of *S. album*, with striking purplish foliage. *S. brevifolium* is a gem, the leaves being densely meaty and white, flecked with red, giving it a charming appearance. *S. coruleum*, which from leaf-characters may also be placed here, is a little annual species which is unique among hardy Sedums for its pretty light blue flowers. Then there are two interesting species, *S. arborescens* and *S. Liebmannianum* (if indeed they are distinct from each other), which resemble this group in leaf and flower, but form tiny shrubs, with branching upright stems. *S. Greggii* is a dainty little plant, rather like the last two, but smaller and with more spreading stems. Another rather rare plant is *S. Cepera*, an annual species sending up a quite tall much-branched flower-stem, producing a loose pyramid of small white flowers up to a foot in height.

Next comes a large, confusing and familiar group, of which the common *S. rupestre* and *S. reflexum* will serve as examples. As in most of the last section the leafy stems root as they run, and tend to form large patches. The leaves are numerous and narrow, mostly roundish in section and pointed, the flowers mostly yellow. These are, on the whole, a rather poor weedy lot, though some of them look well in flower. The well-known *S. rupestre* is easily recognised by its very curved leaves, which cause the ends of the shoots to be almost finger-shaped. The majority of the section, such as *S. reflexum*, *S. altissimum*, *S. tibericum*, and a lot for which I cannot get names, have the leaves more scattered. To *S. reflexum* belongs the extraordinary looking cock's-comb Sedum (*var. cristatum*) which is a fasciate variety of this species. *S. himalayense* and *S. stenopetalum* have short erect, not sprawling, stems, and bear yellow flowers sparingly. *S. anopetalum* is well distinguished by its smaller size, rather upright habit and greenish-white flowers.

(To be continued.)

Hints to Novices.

By R. M. POLLOCK.

THE fruit picking is the most important work out of doors this month, and all apples and pears may now be put in store, choosing a dry day for doing so. The keeping of these fruits during the winter months very largely depends on the care they get when being gathered and stored. They should be hand-picked, and put away dry on shelves in a frost-proof shed or room. Straw on the shelves is quite unnecessary, and only good, sound fruit should be kept, as any specimens at all damaged will decay rapidly. Keep a careful watch on the fruit when stored, using the early varieties as they ripen.

The summer bedding will have to be taken up, and the beds prepared for spring. The Wall-flowers, sown in the early summer, will be fit to go into some of them. Bulbs for the beds, if not already ordered, should be purchased at once. Any tender plants such as Cannas, Cacti, Fuchsias, &c., can be stored under the staging in a greenhouse, or in a spare corner of the greenhouse, water being gradually withheld until they are dried off. Begonias that were used in the bedding-out may also be lifted and gradually dried off. When dry they should be placed in some spot where mice and rats will not attack them. Dahlias will be the first to show signs of frost, and when this has occurred, they too may be lifted, but they should be left as long as possible, as they always make a bright show of colour.

All stakes, &c., should be carefully put away for next year. Any ground not immediately occupied can be dug over and left rough for the winter months. Remove as much as possible of the old foliage, leaves, &c., from the garden, and save all rubbish as recommended in July issue.

Fruit trees, flowering trees, and shrubs, ornamental trees, roses, &c., may now be ordered and planted as soon as they are delivered. If time can be spared, holes for these various plants may be opened, and everything left ready to plant when they arrive. During the winter the herbaceous border will look far less bare if the old flower-stems are not cut down. The usual thing is to go over the border as soon as the autumn flowers are over, and cut everything down to within six inches of the ground, giving the borders a skinned look. They can be quickly cut over in the spring when growth commences, and the effect of frost and sun, on a bright winter morning, on the brown stems of Michaelmas Daisies is sometimes very beautiful.

BULBS IN BOWLS.—These are very useful for those who have no greenhouse or means of keeping flowering stuff during the winter. Almost any of the hardy bulbs can be used, but the most usual are Narcissi, Hyacinths, Tulips, Crocus, Scillas, and Chionodoxas (Glory of the Snow). There seems to be some question as to whether bulbs so grown need be put in the dark for a few weeks or not. Those who have time and space might try putting some in a bright sunny window, and others in the dark for a short time, and note the results. Freesias in pots will soon be ready for staking. This should be done before the foliage gets tall and falls about and cracks, as it is then very difficult to tie up.

Lily of the Valley makes an excellent pot plant, and where heat is available it can be grown with

little trouble. The crowns should be obtained at once. By purchasing what are known as "retarded" crowns the date of flowering can be judged to within a few days. As soon as these retarded crowns are brought to the light they commence to grow, so that all preparations for potting should be ready on their arrival. About ten crowns can be put in a 5-inch pot filled with good potting material. The pots may then be stood in a cold frame for a few days and eventually removed to a warm house. The time the plants take to come into bloom will depend upon the temperature of the house.

Chrysanthemums may be brought indoors and stood in their flowering places. They should not be put too close together, as this causes the foliage to turn brown, and looks ugly. If placed a short distance apart the foliage remains green for a considerable time. The advantage of growing decorative varieties instead of the large exhibition blooms will soon be noticed when the plants have to be used for room decoration.

Marguerite Mrs. F. Sander.

In 1910 Messrs. Sander & Son, of St. Albans, received an Award of Merit for this new variety, and yearly it increases in favour, for it forms a delightful pot plant, and can be obtained in flower, by successive batches of plants, throughout the greater part of the year. As a bedding subject this Marguerite will prove a great favourite, so that a stock should be propagated from cuttings for next season.

Our illustration, from a photograph taken in September, shows a bed which has been flowering continuously through the summer months, and the only attention given to it was just picking off the dead flowers. The plants were bedded out in May about 18 inches to 2 feet apart, after Tulips had been lifted from the bed. A bedding plant like the dwarf *Ageratum* Princess Pauline or blue *Lobelia* would give a good finish to the bed.



A BED OF MARGUERITE MRS. F. SANDER, at Glasnevin.

Cyclamen and Primulas will be the better for a little heat, but Cinerarias will stand in a frost-proof structure.

The greenhouse and frames will be getting pretty full, and care should be taken not to spill much water about the floors, as owing to the lateness of the season and the lack of strong sunshine, drying will be slow.

On the 22nd and 23rd of this month there will be a fruit and flower show at Ballsbridge, and as well as that there will be a conference on fruit, insects and fungi, which will take place on Wednesday, 22nd, afternoon and evening, so there can be no excuse for those interested in fruit culture to be able to hear something new on this subject. At the show itself not only will there be fruit of all sorts, even bottled fruits, but there will be vegetables, plants in pots, and cut blooms of Chrysanthemums, Carnations, hardy plants, and berried plants. Entries close on the 8th inst., and schedules and entry forms can be obtained from the Secretary, Royal Horticultural Society, 5 Molesworth Street, Dublin.

Mrs. F. Sander is a variety of *Chrysanthemum frutescens*, possessed with sturdy growth and double white flowers; these vary from 3 to 4½ inches across, with long ray florets and a cushion-like centre, the blooms suggesting very refined examples of double Pyrethrums. The flowers are carried on good stems, and last well for cut bloom, and will probably be useful for wreath work. Forty or so years ago *Chrysanthemum frutescens*, the common Marguerite, was rarely seen until a market grower, Mr. Herbst, of Richmond, Surrey, started to grow the flowers for market: now it is one of the most popular plants for window boxes and villa gardens.

About ten years ago a variety, which was named Coronation, showed a decided break from the type, the flowers having petaloid segments, making an Anemone-like centre. In a few years this was followed by Queen Alexandra and its pink form, then came Perfection and its pink variety, but all of these were more or less variable, and did not give satisfaction in many cases, but Mrs. F. Sander is keeping very constant, and is liked by all who have grown it.

Streptocarpus.

IT is many years since the first hybrid *Streptocarpus* was raised from *S. Rexii* and *S. Saundersii*, but in the meantime much has been done in hybridizing and selection, which has resulted in a magnificent strain being created.

The first step to popularise this plant was taken about twenty-five years ago by the Curator of the Royal Botanic Gardens, Kew (Mr. W. Watson), who produced *S. kewensis* by crossing *S. Rexii* with *S. Dunnii*, the latter species having been introduced from S. Africa about that period. Another hybrid raised at Kew from *S. parviflorus* and *S. Dunnii* was named *Watsonii*. Messrs. Veitch saw great possibilities in the *Streptocarpus*, and they secured a selection of the Kew hybrids, which came under the care of the veteran John Heal, who has succeeded in producing many of the fine examples that we have to-day. These beautiful plants are remarkable for the abundance and almost continuous succession of bloom, and the great variety of colour. We have white, red and rose, purple and violet, white and blotched kinds, and mixed shades of colour, all of which come tolerably true from seed. Some fine exhibits of these charming plants are occasionally seen at the Royal Horticultural Society's Shows at Vincent Square, the plants being only seven months old, yet they bore a wealth of bloom. We mention this fact just to show what can be done both by the amateur and private gardener, for few plants, if given ordinary care and attention, prove more amenable to cultivation. A

selection now largely grown is one known as the *acheniflorus* section, which were so named on account of their striking resemblance to the flowers of an *Achimenes*, and were created by crossing some of Veitch's original hybrids with *S. polyantha*. The flowers are produced in great profusion from May to September, the panicles being branched and very effective. There are various shades of colour, such as white, rose, and lavender-blue.

Streptocarpaceus should certainly be more largely grown, for few subjects can equal them for distinction and delicacy of colour, while they are invaluable for the cool greenhouse, conservatory, and table decoration.

In the first place, the seed should be procured

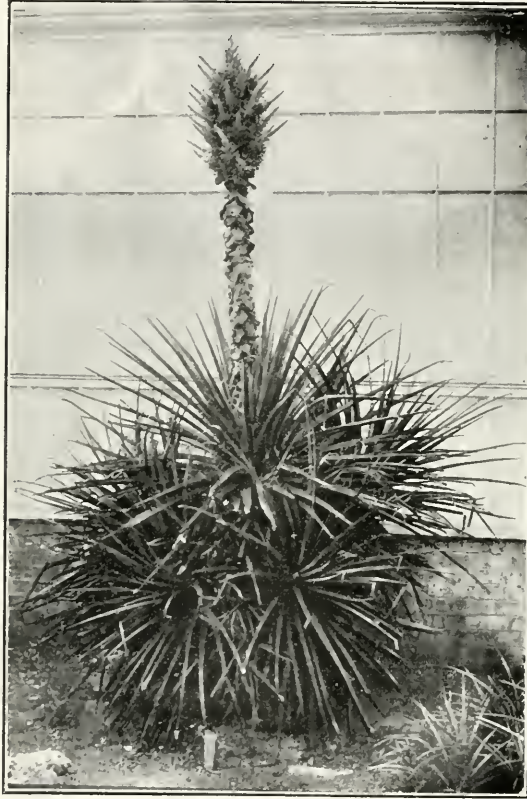
from a reliable firm, and then sown thinly and evenly in pans of light soil, barely covering it with very fine compost. The whole ought then to be covered with a sheet of glass, and if the plants are wanted to flower the following autumn they must be sown early in the year, and placed in a temperature of 65° F., when the seed will soon germinate. Directly the seedlings are large enough to discern one from another they should be transferred to pans or boxes of fairly light soil, about an inch apart. Return to the same temperature, and keep them shaded from strong sunlight. Under such conditions they soon make progress, and must be potted on as root action warrants a shift. About June or July they should

be ready for three- and four-inch pots, while four- and five-inch pots will be large enough for them to flower in, although we have seen extra strong examples placed in a size larger. A good rooting medium consists of partly rotten loam two-thirds, and leaf-mould one-third, with a fair sprinkling of silver sand; the whole being passed through a half-inch sieve, and thoroughly mixed a week or two before it is required. Hard potting must not be practised, for the roots delight to ramble as it were among loose material that is not soddened with water. When the plants are placed in pots, an intermediate temperature is best, and a shelf, or somewhere near the glass, proves an ideal position, if shaded from the direct rays of the sun. A few stray flower scapes will appear in the early part of the summer, which must be removed, and the plants encouraged by occasional waterings with weak liquid manure if the receptacles are filled with roots.

Streptocarpaceus require careful watering at all times, but they enjoy an atmosphere not over dry, while a little fresh air must be admitted at every favourable opportunity.

Like all *Gesneraceous* subjects, they are most susceptible to excesses of any kind, and to secure the best possible results one must try to strike the happy medium. Being herbaceous perennials the best forms may be grown on, using the compost in a lumpier condition, and a sprinkling of Clay's fertiliser, or some other that is easily assimilated, will be of considerable benefit. One of the secrets of success is to raise a batch of seedlings most years, because there is nothing like keeping up a young stock to get the finest blooms.

SOUTHERNER.



PUYA CHILENSIS, 12 feet high.

Puya chilensis.

THE development of an inflorescence by this Bromeliad in the open at Cambridge is an event which amplifies the usefulness of "experiment."

The plant in question was planted in the open between the plant-houses some fifteen years ago, and since that time it has thriven in a remarkable manner, building up vigour year after year, until now it has reached its flowering stage.

The accompanying illustration depicts the entire plant, including the fully developed inflorescence.

The flowers were borne with great freedom, the colour of same being a greenish-yellow, and their duration being about a month from the opening of the first flower until the last one had fallen.

The scape grew about half an inch daily, and the huge bracts on the outside of same were a feature to be noted. The scape continued to grow until it had reached a height of nearly six feet, when the side branches of the inflorescence gradually developed, numbering in all about forty.

The illustration clearly shows the egregious character and size of the huge rosettes of succulent leaves. The side growths were developed in 1910, when the appearance of the inflorescence was anticipated, but no sign of its development was apparent until February of this year.

The height of the spike is just about six feet, including the inflorescence, and the entire plant from the base to apex is quite twelve feet.

Much credit is due to Mr. R. J. Lynch, M.A., the Curator of the Botanic Gardens, for the success which has been attained in the successful rearing of this handsome plant.

Numerous other tender plants can also be seen thriving between the plant-houses at Cambridge, and are one of the noteworthy features for which this garden is famous.

II. C. ELSDON.

✿ ✿
OXALIS LOBATA.

ONE of the brightest plants in flower on the rockery at the end of September is this pretty little *Oxalis*, from tufts of neat foliage, bilobed and slightly glaucous underneath; flower stems only two or three inches high arise and bear large golden-yellow flowers. *Oxalis lobata* has a tuberous root. Although it is a native of Chili it seems quite hardy and is a good flower.

Dracocephalum bullatum.

LOVERS of Alpines are always on the watch for novelties, and even if a plant is not remarkably beautiful, yet if distinct and uncommon in appearance it will probably be much sought after and admired.

Personally we do not consider this novelty a beautiful plant, although others may differ, but one that is abundantly distinct with good qualities.

Some of the other *Dracocephalum*s are not long lived, but this new Dragon's Head seems a thrifty, easily grown plant for a sunny place when given ordinary soil. The plant was photographed

on the Glasnevin Rockery in May, a crop of seed ripened and germinated freely, then at the beginning of September it was again flowering as freely as in May, and late autumn flowering plants are particularly valuable for the rockery because of their scarcity.

The leaves are remarkable because of their thick leathery texture and wrinkled, raised surface; they also form another means of increasing the plant; if placed in sand in a warm house they will produce young plants. The leaves are about three inches long by two broad, oval in shape, narrowed at the base with crenate margins and strong purplish veins. The leaf stalks are three to four inches long. The flowers, each an inch in length, are purplish, spotted with deep purple in the throat, borne in dense heads on stems from six to nine inches high, produced freely enough to form a very attractive plant.

Dracocephalum tanguticum is another late flower very different in appearance to *D. bullatum*. It forms a little bush about a foot high, and carries numerous light blue flowers on long dense spikes, making an excellent subject for the rockery. Both these species have been introduced from China by the Bees, Ltd.

A fine plant now flowering well at the end of September is *D. Ruyschianum japonicum*, forming a bushy subject about a foot high, with long narrow leaves with recurved margins, and bearing at the tips of the shoots clusters of large pale blue flowers.

The *Physostegias* are also sometimes called *Dracocephalum*s. They are handsome North American plants, useful for a rich border, growing up to four feet high, with long spikes of pink or white flowers opening from July to September. The flowers are interesting and curious in that they are cataleptic, moving from side to side if touched as if they worked on hinges.



DRACOCEPHALUM BULLATUM.

A Useful Plant for Forcing.

BULBS, such as Hyacinths, Tulips, &c., are largely employed for forcing, but for any one who desires something out of the ordinary they could not do better than force a small batch of *Dielytra spectabilis*. The flowers are produced in drooping racemes, and are white and rosy-crimson, while the plant grows about two feet high. Most herbaceous borders contain a few examples at least of this graceful plant, and if it is decided to lift some specimens for forcing, now is a good time to do it while the crowns are dormant. Large pots are not required, for a good deal of the soil can be removed from the roots, and then a receptacle should be chosen which will just comfortably take the root. The intervening space may be filled rather firmly with ordinary potting compost, and then the pots should be plunged in ashes or similar material. When winter approaches, remove them to a cold frame, especially if the weather is frosty, and cover with Archangel mats. Here they can remain till wanted.

Hard forcing is not advisable, as the best results are obtained when they are brought along gradually. Keep well up to the light to prevent them getting drawn and spindly, then the grower will be rewarded with well-flowered specimens which will prove a welcome change and a pretty addition to the bulbs.

As they pass the flowering stage the plants may be hardened off and planted out in the border or reserve garden, where they will soon recuperate, and in two years or so will be quite ready for a similar experience. —SOUTHERNER.

Bulbs in Bowls.

How is it that so few practising this mode of growing bulbs record their experiences in the gardening press? This method has extended enormously within the last few years, yet very little in the way of published records has appeared. I am under the impression that several of the subjects frequently recommended as easy to grow in this way are named purely on hearsay. Personally, I have had very little good with Freesias, Snowdrops, Grape Hyacinths, or *Allium neapolitanum*. It would be interesting to learn how these are made amenable to this treatment. I have found it simply itself to flower perfectly any of the various *Narcissi*, and I have tried a good many. The same applies to Jonquils, Hyacinths and Crocuses. Amongst sundry bulbs complete success has resulted with *Iris reticulata*, *I. persica*, and *I. alata* when planted early; the same of *Scilla siberica* and *Tritelia uniflora*. In the case of Tulips, though excellent results are often got, unaccountable failures have also occurred. I strongly favour plunging the bowls in moist cocoanut fibre or in the old compost of previous years. Any deep box or barrel will answer, and if sufficiently deep more than one tier of bowls may be put in. With six or eight inches of this damp material over the topmost bowl there should be no necessity to apply water until the bulbs are thoroughly rooted—an average of ten to twelve weeks being usually required—about a fortnight less for Roman Hyacinths. Once top growth has commenced there is less likelihood of overdoing the watering, still it is well to employ bowls of a shape that permit ready drainage when tilted on one side for a few minutes after watering. —NARCISSUS.

The Month's Work.

The Flower Garden.

By J. H. CUMMING, Royal Dublin Society, Ballsbridge.



GENERAL REMARKS.—It is generally conceded that the success of a well-ordered garden is in no small measure attributable to the foresight of those responsible for maintaining continued interest throughout the year. At present beds and borders are still gay with a wealth of colour, mainly the result of seeds sown months ago, but the glory of these will shortly fade, and meanwhile the prudent gardener will be advancing preparations for the future. The display for spring will be all the stronger and brighter if the beds, without further scruples, are now cleared and refilled with what has been prepared for them. Any stock plants needed for next year should be potted up and removed out of danger of early frosts. The beds should be well dug over, but unless very poor should not be manured, as it induces soft growth, which is so easily injured by frost. Some fresh soil may be added instead. Before planting tread the ground fairly firm, and place the plants nearly touching each other, as very little growth takes place until the flowering period in spring. When bulbs are not available a grand effect may be made with Wallflower—the most beloved of all spring bedders. Then summer-struck *Violas* replanted now persist in flowering early. Even old *Viola* plants which have done duty all summer may be lifted, the old growth cut away and the roots torn asunder. Small pieces soon grow into nice plants, and good displays are often produced in this way. Where seed of Forget-me-Not (*Myosotis*) has been forgotten, old plants break up readily, and if planted now will soon establish themselves before growth is checked by the approach of winter.

BULBS.—The recent rains have now made grass land softer, and so is in good condition for planting bulbs intended for naturalising in grass. The sooner this is done the better, and shady, neglected places can be brightened by planting the commoner varieties of Daffodils. Bulbs are cheap, and a few hundred purchased each year soon furnish a place. Some gardens have lines of Daffodils that have been in the same position for years yielding nothing but leaves and a stray flower. Lift the lot and replant very thinly in good fresh soil and the result will be an agreeable surprise. When flowers are wanted at Christmas the Paper-white *Narcissus* is generally relied on to furnish the supply. A much better thing is *Narcissus odoratus* *argenteus*. It is a bright golden yellow, very free flowering, each bulb throwing up several spikes and splendid for cutting. Costing about 3s. 6d. per 100, it should take the place of the Paper-white for early cut flower and pot-plant decoration.

SEEDS.—This has been a good autumn for seed ripening, and it is not too late yet for securing

seed pods of *Clarkia*, *Asters*, *Godetia*, *Candytuft*, *Antirrhinum*, &c. Gather on a dry day and hang up in an airy place till well matured, after which they can be cleaned and labelled. Writing of this reminds me that I have had numerous enquiries this year about *Spartium junceum*—Spanish Broom—which flowers so freely here all summer. It is easily raised from seed sown any time in a gentle heat, and when large enough to handle pot into small pots and grow on in this way till ready to plant into their flowering positions. Being taprooted they are impatient of removal when large, but planted out small they soon make fine plants, and flower freely from the second year. Prune the long shoots hard back early in spring, and a fine shapely bush can be kept, as they bear severe pruning splendidly. Seeds are plentiful this year, and should be gathered whenever the pods get brown.

CARNATIONS.—As noted in previous issues, border Carnations may be planted this month in the positions in which they are expected to flower, provided the situation is a dry and sheltered one. Beds of one variety and colour look best. Try and change the ground each year, and instead of too much rank farm-yard manure give a dressing to the surface of horse-droppings and fresh soil taken from under the sod of an old pasture field. Dig this in and tread the soil firm and level, and plant fifteen inches between the lines and plants. This will prevent the winter's frosts throwing out the plants, as so often occurs where the ground is left soft. I lately saw a batch of American tree Carnations that were planted out of pots last April after flowering during the winter, they are now full of buds just bursting into flower, and are being potted into eight-inch pots. This plan is worth adopting, as the return far outweighs the trouble expended.

CALCEOLARIAS.—Where room can be provided a dozen or two of nice plants of shrubby *Calceolarias* should be lifted and placed in seven- or eight-inch pots. Kept in a peach-house or late vinery they grow on and make lovely plants full of flower, for conservatory decoration next April. *Calceolaria amplexicaulis* should also be potted up now, as it makes excellent standards for next summer's display, and though an old sort, its merits as a bedder have been tested this year and proved invaluable in a dry season. It is being grown more than in former years to the exclusion of the dwarfier varieties.

The Fruit Garden.

By D. McINTOSH, Gardener to Alderman Bewley, Danum, Rathgar.

VINERIES.—In houses where vines are intended to be started in the beginning of January, the growths should now be shortened back to four or five leaves, and towards the end of this month prune back to two eyes. It is always well to leave two eyes, so that a choice of shoots can be made when the embryo bunches are showing. In later vineries where the grapes are not ripe, shorten back the side growths to allow sun and air to reach the bunches. Where black grapes are ripe, the foliage must not be thinned too much, otherwise they will be apt to lose colour. All leaves that are touching the glass should be removed as they tend to hold the moisture and conduct it from the glass to the bunches, causing

the berries to mould and decay. A little fire heat will be required in wet weather to dispel damp, with a little ventilation both front and top. When the bunches become few in any one house these should be cut and taken into a dark room and hung in bottles of water. Afterwards thoroughly syringe the vines with the garden engine. Repeated washing at this time with insecticides does more to destroy pests than in the winter, when they are usually hibernating in cracks and crevices.

POT FRUIT TREES.—This is the best month of the year for the potting and re-potting of fruit trees. There is no necessity to wait till the trees have shed all their leaves, for if some of the leaves are on the trees, more especially peaches and nectarines, they will be of more good than harm. The trees should always be syringed two or three times daily after being potted until they shed all their leaves. This spraying will have the effect of nourishing the fruit buds sufficiently till the roots commence to work in the new soil. In potting, start away with the earliest varieties, follow on with mid-season and then with the late varieties. One of the most essential points for successful pot culture is the selection of good soil. This should consist of a good fibrous loam, fairly heavy, but not clayey. Some good decayed stable manure and a little old rough mortar should be added to this. It is always best if possible to store the soil some time previous to its being used. Care should be taken in repotting or top-dressing to ram the soil firmly.

STRAWBERRIES.—Runners planted out during July and August should have the Dutch hoe constantly applied between the rows to encourage growth as much as possible before the end of the season. Cut away all newly-made runners from the individual plants whenever they can be seen. From two and three-year old beds remove the mulching, and also all runners that continue to be made. Runner plants that were potted up for forcing purposes should be kept in the open, as long as they are safe from frost, and in a position well set to the sun and air. Just before bad weather sets in have them at once removed to a cold frame. Commence by placing a layer of ashes on the bottom, stand the pots closely together, and as the work proceeds fill in between the pots and up to the rims with sifted ashes. By doing so they will be safe against all kinds of weather, worms and slugs will be kept at bay, and but little watering will be necessary until the turn of the year.

ROOT PRUNING.—In many gardens, and particularly those of a rich heavy soil, the operation of root-pruning will be found a necessity to bring the trees into bearing order. Throughout their season of growth the trees, intended to be root-pruned, should be noted. This can easily be observed by the strong vigorous growth that is being formed and an almost complete absence of fruit buds. Where this operation has to be performed, the best plan is to prune the one half of the tree one year and the other half the next or following year. Start off by taking out a half circle, trench three feet from the base of the tree and to the depth of two and a half feet; then take a garden fork and carefully work back the soil from the roots until these are laid bare. All coarse roots must now be cut with a sharp knife, a clean and slanting cut from the top part of the root, so that the roots produced from this cut will have a greater tendency to keep nearer the

surface of the soil. In filling in again the same soil may be used, unless it is of a heavy retentive nature, when it would be better to include a little lime rubble and half-inch bones. It is very important to see that the roots are nicely spread out and equalised as the filling in of the soil goes on.

The Vegetable Garden

By J. G. TONER, County Instructor in Horticulture, Co. Monaghan.

BET.—This is a root that is very easily damaged by frost, particularly when the ground is in a wet state. It is also very susceptible to being injured by rough methods in lifting. Therefore the roots must be dug up, not pulled, and a fork is much preferable to a spade for the operation. The opening is best made well out from the drill, and the tool driven very deeply down well under before the attempt to raise is made. A cool building in which they will be safe from frost is the best storage, and fine clay, ashes or sand used for packing between them. The leaves may be cut off two inches or so above the tops. In some places it has been found that rats and mice prove troublesome: in such cases strong wooden cases will afford more security.

MOULDING CELERY.—All work of this nature is usually finished up before the end of the month. Owing to the dewy mornings and evenings only the middle portion of the day should be availed of, as there would be a great tendency to heart-rotting if they are finally closed in while wet. A liberal use of soot will to a large extent keep slugs away.

SEAKALE.—This very choice spring vegetable should find a place in every garden however small. Even a score of roots well looked after will produce a number of very dainty dishes at an exceedingly scarce time, and seakale is permanent, a very material point. Seeing that it is suffered to remain in the same position for years a little more pains may properly be taken in the preparation of the site, a matter which claims attention just now. Old cow manure is most suitable, and a very liberal application will lay the foundations of a luxuriant crop if honestly worked into the two spits deep that vegetable so well deserves. Never mind about the planting for the present, but have this little preliminary work on the finished list.

TOMATOES.—If green fruit be still hanging on outdoor plants let the trusses be cut off and hung in a warm place where the fruit will colour and ripen; it will, however, be much inferior to that which has reached maturity under natural conditions.

CABBAGE.—In vacant plots cabbage may still be planted, and another item and a very useful one is, that to provide a succession in spring before peas or cauliflowers arrive a number of plants may now be dibbled out on a raised ridge to gain strength. Where a few inches are allowed between them it will facilitate the work of removal next spring, for "the careful hand of the gardener" will ensure that each retains a ball of soil, consequently little of the check of removal will be felt. This detail in dealing with plants of any kind, is one that the novice would do well to pay strict attention to, with the most beneficial

results to the plants of whatever kind they may be.

LEEKS.—Only a small percentage of gardeners give this useful vegetable fair treatment in the matter of blanching. It might become a bi-monthly task. Leeks continue to grow during the winter, and the constant moulding up of the stems ensures a large amount of white stem, the valuable portion. Therefore see that soil is being constantly hoed or shovelled up to both sides of the lines; good tender leeks will not be despised in spring except perhaps by those who have only the tough green specimens, all leaf and little stem.

FORCING RHUBARB.—On account of their scarcity, apples will command a high price during the season. Therefore a few sticks of early rhubarb will be very welcome. These, however, will not come along merely for the wishing. When the leaves have died away in the natural course, some stools may be lifted and exposed to the weather, rain, frost or snow, and afterwards these will be in the proper condition to answer the question put them by way of artificial heat, whether it be derived from hot manure, warm pipes, or otherwise. The main thing at present is to have them prepared for the ordeal. It will prove most economical as well as satisfactory, for when passing judgment on your own forced rhubarb you are convinced that it is much sourer or sweeter, as you will, than that procured elsewhere.

Review.

Mushroom Culture.*

THE cultivation of mushrooms is only successful when fairly good crops are obtained. Mr. Dykes has had twenty-five years practical experience, and sets out clearly in this little handbook some essential details which must be known so as to achieve success.

In the first chapter the author deals with the commercial side, and shows that one cannot expect to make a fortune by growing mushrooms, but that there is money to be made by their culture. Mushrooms may be grown in sheds, under glass, in caves and tunnels, or in the open, and after reading the life history one gets a clearer idea of the conditions required by mushrooms. The treatment of the manure is most important, and the types of beds and how to make them is explained.

There are two recognised times of the year for making mushroom beds of the ridge type in the open. One in September or October, to come into bearing from January to March, and the other in December or January to bear from March onwards. For summer bearing, beds of the flat types are to be recommended.

Ridge beds made up in October need the maximum amount of covering of litter or straw, 18 inches to 2 feet of litter, will be needed in mid-winter, but it should be put on gradually as the weather gets colder.

Spawning and soiling the beds is dealt with and emphasis is rightly laid upon getting the very best spawn procurable.

We can thoroughly recommend this handbook to those who wish to grow mushrooms.

* "Mushroom Culture." By W. Doyle, F.R.H.S. Price 1s. net. The Lockwood Press, 1 Mitre Court, Fleet street London.

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Irish Gardening

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EDITED BY C. F. BALL.

Apples for Profit.

By FREDERICK W. HAMMOND.

THE EDITOR has asked me to write a short article on the above subject for the November issue of IRISH GARDENING. As my knowledge of the local conditions attached to fruit growing in Ireland is limited, my remarks will be to a great extent of a general character applicable to almost all localities, and I must leave my readers to apply whatever they may find therein at all useful to their own case and to meet their own local conditions.

In the consideration of any scheme or project for growing apples for market, the first point which must have attention is the soil in which it is proposed to grow them and the situation and aspect of the particular parcel of land.

Probably in a great number of cases these points may be fixed—that is to say, that the prospective planter has already a farm or portion of land which he proposes to plant with apples, and it is not a question of the comparative suitability of several different sites, but whether or not it is desirable to start apple growing on one definite plot.

To those in the happy position of being able to pick and choose, the ideal piece of land should consist of a good sound deep loam; it should have a good elevation, but not be situated so high on the crown of a hill as to be too much wind-swept, while the tilt of the land should be towards the south or south-west. There should be shelter from the northerly and easterly winds; but, on the other hand, the plot should not be surrounded even on those sides with woods, or considerable trouble will be found with all sorts of insect and feathered pests.

More frequently, however, the case occurs, as stated above, that a grower has a particular farm or field which he wishes to plant down with apples, and it is a question as to the advisability or otherwise of such a course. If the land is situated in a hollow as measured by the surrounding country, even though, according to altitude figures, it may be all right, yet frost

is almost certain to collect on such a situation and cause great danger of loss or, if not so, great expense in combating it.

Therefore, so far as our present knowledge and experience show, it is not advisable to plant apples in any hollow or at the bottom of any valley where there is not adjoining lower land into which the mists and frosts may collect. Of course, this is exceedingly unfortunate, for it is just in these positions that the best soils are found, being brought there by washing down from the surrounding hilltops; but, as stated above, under our present conditions and the present cost of frost-fighting, it is inadvisable to plant fruit there.

Again, bare, exposed hillcrests should never be chosen for planting with apples, or indeed any fruits, for the trees are liable to be thrashed about by the cold winds of spring just when they are blooming, and again by the boisterous equinoctial gales of autumn just when the fruit is maturing and the grower is anticipating his harvest.

It is also exceedingly unwise to plant on a field sloping towards the north or north-east, for such fields get considerably less of the sun through half the year, from September to March, than do those which are tilted towards the south or south-west; and, of course, more or less of the sun's rays mean more or less warmth to the soil.

Having decided upon a piece of ground, the necessary preparation of the land to receive the trees must be taken in hand. In the first place, the drainage must be right, as apple trees constantly standing in wet, undrained land soon cease to grow, and die. It is advisable that the land drains should be deep, even though they have to be nearer together on that account to thoroughly drain the ground, as there is always the danger of the roots of fruit trees getting into shallow pipe or tile drains and blocking them, with very harmful results. When the drainage is put right the land should either be ploughed

deeply and subsoiled, or else bastard-trenched with forks and spades.

With regard to manuring, it is not advisable to add dung when planting apple trees, the better procedure being to heavily manure the previous crop, which is very often potatoes, giving perhaps a dressing of lime or of superphosphate, or whatever is needed before the ploughing above mentioned—the needs in this direction being discovered by the aid of a chemical analysis of a sample of the soil carried out by an expert at the business.

The questions as to what varieties of apples to plant, what shape and sort of tree, and on what stock they have been worked, depend on the sort of soil one has got to deal with, and also the markets one is trying to cater for.

Taken as a broad general rule, to which there are doubtless many exceptions, soils which are deep and heavy, and inclined to be clayey, grow very large apples of several of the cooking varieties, but colour is lacking in the dessert varieties: while on the other hand lighter and more shallow soils grow smaller but more highly-coloured fruits.

If the land that is to be planted is of the former description, varieties like Bramley's Seedling, Newton Wonder, Lane's Prince Albert, Lord Derby, Grenadier, Warner's King, should succeed admirably, and if the markets which the grower is catering for are likely to take these profitably, it would be wise to plant a considerable quantity rather than varieties like Worcester Pearmain, James Grieve, &c., which need a good colour to enable them to sell to the best advantage.

The converse is true, though perhaps to a less extent with regard to light soils as, though there is excellent coloured dessert fruit to be got off this land, it often yields fine large cooking apples as well.

With regard to the best shape of tree, and on what stock this should be, the planter must often be guided by his particular circumstances of his tenure of the land, the amount of capital he has available, &c., and I can only indicate what in my opinion is the ideal course to pursue, where one either owns the freehold or has a long lease with a prospect of reasonable compensation at the end of it, and a certain amount of available capital for the trees.

(To be continued.)

Apple Tree Canker.

Most gardeners if asked to state the cause of apple tree canker would probably reply that it was due to lack of vigour in the tree, induced very likely by unfavourable conditions in the region of the roots, or by some other adverse circumstance in the physical environment of the tree.

While admitting, however, that the nature of both the aerial and subterranean environment of a plant may, and often does, play an important part in rendering a plant liable to disease, it has to be recognised that the majority of the diseases of plants, like those of animals, are due to the attacks of definite parasitic organisms. Apple tree canker is a case in point, and may be described as a highly infectious disease, due to a particular parasitic fungus, without the presence of which, however lacking in general vigour an apple tree may be, it will never develop canker.

Experience leads one to believe that the infectious nature of the disease is not sufficiently appreciated by growers, and cases have arisen, not infrequently, where the most infectious stage of the disease has not even been recognised by them as canker at all. Hence it may not be superfluous to direct attention to the two stages in the life cycle of the fungus which causes the disease, particularly seeing that in most of the accounts of the disease which one sees in English books and leaflets, the early and particularly infectious stage receives very scanty or even no treatment.

It is scarcely necessary to describe in detail the appearance of canker, but a glance at Fig. 1 will serve as a reminder of what one usually regards as typical of canker. There is a more or less open wound on the twig surrounded by a swollen margin of bark. On the bark surrounding this wound the fructifications of the fungus can usually be seen, especially if a pocket lens be used. These are small, rounded or somewhat pear-shaped bodies of a distinct red colour, often in clusters of several together.

When young these red *perithecia* (as they are called) contain a number of elongated sacs, each



FIG. 1.



FIG. 2.

containing eight spores. As ripening proceeds, these spores are emptied from their sacs, and are finally extruded from the perithecium through a small pore at its apex. These spores, if they find lodgment in a crack or wound in the bark of the tree, germinate there and produce canker.

All gardeners are familiar with the "knife" treatment (followed by tar or paint) for the type of canker described, and the object of the present note is not therefore to go into detail in this connection, but rather to call attention to an earlier and much more infectious phase of the disease which, as stated above, is by many gardeners not recognised as canker at all. This is perhaps scarcely surprising, seeing that the earlier mycologists themselves looked upon this stage as being due to quite a different fungus to which they gave a name of its own.

Fig. 2 clearly shows the condition of things in the early stages of canker. The bark—nearly always at a branch or near a bud—is dead over a more or less circular or oval area. It is commonly more or less wrinkled into concentric zones, and bursting through it are to be found numerous small pustules of a whitish colour. The base of each of these pustules is made up of a dense mass of fungus threads,

while on the outer free surface countless myriads of spores are produced which are washed down the twigs by every shower of rain, and, gaining entrance into the bark through wounds or insect punctures, establish fresh centres of canker.

Fig. 3 is a photo micrograph of a thin section cut with a razor through a small portion of the bark bearing one of these pustules, and it shows clearly the way in which the cushion-like mass of the fungus has burst aside the outer layers of the bark in its endeavour to reach the exterior (to the right) so that its spores may be free to become dispersed. The magnification is not sufficiently great to show the spores themselves individually. The earliest formed spores are very small and single-celled, but soon these are replaced by much longer, almost thread-like, spores each composed of several cells, and each therefore providing several chances of infection at a wound.

It is this early and highly infectious stage of canker that is so frequently overlooked, and, of course, the question at once arises, how can this important source of infection be dealt with? The remedy is simple, but requires patience and perseverance. Take a small brush, such as a penny camel's hair paint-brush, and paint over each affected area, taking care as far as possible not to wet the still healthy bark with either ordinary paraffin oil or with methylated spirit. The former liquid can be used in dry, the latter in either dry or wet weather. If this be done not

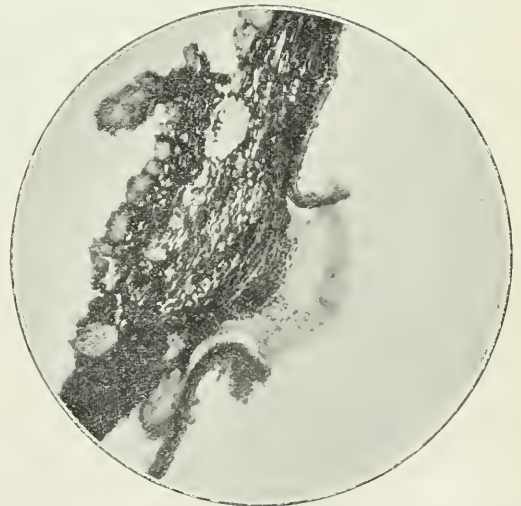


FIG. 3.

only will the spores be killed, but the fungus spawn within the bark will also be destroyed, and the development of the second stage in the canker cycle at these places will be inhibited.

G. H. P.

Planting in Uganda.

By E. BROWN, F.L.S.

THE flow of latex lasts about ten minutes. Each Rubber tree five years of age will give 1 lb. of dry rubber in the year. A pound of rubber means 5 pints of latex. The yield of each tree at one tapping is thus $\frac{1}{150}$ of a pound of rubber, or $\frac{1}{30}$ of a pint of latex.

The latex is brought to the factory in a liquid form by the tapper. At this stage it exactly resembles milk.

Treatment at the factory consists of coagulation of the latex by means of acids. The coagulated soft rubber is then passed between rollers which press it into sheets or ribbons. At this stage the rubber is still perfectly white. The sheets are then hung up to dry in a dark, airy room. Drying takes two months. The rubber is then changed in colour to a pale amber, and is transparent. In this condition it is shipped to the market.

COFFEE (COFFEA ARABICA).

The Coffee seeds are sown in beds thickly together, and watered and shaded until germination takes place. This takes 50 days. As soon as germinated and before the cotyledons unfold, the seedlings are pulled up and pricked off into other beds 6 inches apart. Here they remain until ready for planting, which is at nine months from sowing the seed.

The land for Coffee is cleared in the same way as for Para. The distance of planting is 8 feet by 6 feet, or about 900 trees per acre.

Upkeep work consists of regular weeding, pruning and the topping of trees at 6 feet. The latter is to ensure the crop being within reach of the pickers.

The Coffee tree produces its first ripe crop at two and a half years from seed, and subsequently yields two crops annually. The berries when ripe are deep-red in colour, slightly smaller than a cherry, and contain two beans surrounded by a sweet pulp. A tree usually flowers before the previous crop has been harvested. The flowers are pure white, similar to a Jasmine flower in shape. They are produced in great abundance, each on a short stalk in the axils of the leaves, and are deliciously scented. All the trees on a plantation come into flower at once, after rain, and in twenty-four hours the display of bloom is over. While it lasts it is a glorious sight.

Picking has to be regularly attended to during the season to harvest the berries as soon as they are ripe. The preparation entails a considerable amount of machinery.

The first operation is that known as *pulping*.

This consists of the removal of the outer red jacket, and is accomplished by a machine which has a corrugated drum, which in revolving tears off the jacket and separates it from the coffee bean. A stream of water is constantly running through the machine with the coffee to keep the drum clear of beans and pulp.

The next operation is that of *fermenting*. The object of this process is the loosening of the sweet pulp surrounding the beans. Without fermentation this substance is difficult of removal. The time required for fermentation is twelve hours. The coffee beans are then washed well and are ready for *drying*. Drying can be carried on in the sun or by means of artificial hot air driers. It is a long process without artificial aid.

When the Coffee is completely dry it has to be again put through a machine for the removal of the parchment shell covering the bean. This process is known as *peeling* and *polishing*. From this machine comes the actual bean as ready for roasting, but it has still to be run through another machine for the purpose of *grading*. This machine sorts out the beans into four grades or sizes, and they are then ready for shipment.

COCOA (THEOBROMA CACAO).

Cocoa seeds, like Para seeds, quickly lose their vitality, and have to be sown as soon as procured. They germinate in fourteen days. They are sown in beds as in the case of Para, and like them are subsequently put into Banana pots. Shading has to be well attended to, as young Cocoa are quickly ruined by exposure to the sun.

The land for a Cocoa plantation has to be carefully chosen. Cocoa will not thrive in a position exposed to winds. The soil must be very good and drainage perfect.

The land is cleared in the same way as for Para. As soon as possible it is then planted up with Bananas to provide shade for the young Cocoa.

The young Cocoa which should be at least six months old, are planted between the Bananas at distances of 13 feet by 13 feet, or 250 per acre. If the Bananas have been planted six months they will probably provide sufficient shade, but if they do not a temporary shade made of Palm leaves is erected over each plant, and this is kept in position until the Bananas are sufficiently advanced.

Upkeep work as in the case of Para and Coffee, has now to be maintained for five years, when the Cocoa commences to bear.

The Cocoa tree bears its flowers in bunches on the main stem and old wood of the tree. The flowers are small and insignificant, in contrast to the large heavy fruit.

The fruits vary in size in different varieties from 4 to 10 inches in length; colour also is varied. The shell of the fruit is hard and thick; it contains about 30 seeds of about the size of a cob-nut on a central placenta, surrounded by a sweet pulp. The seeds are the marketable Cocoa.

In preparing the product the first operation is *picking* the fruit. These are cut off with a knife and are gathered into heaps for *shelling*. In shelling, the fruits are given a tap with a piece of wood to fracture the hard shell, and the seeds are all removed in a mass.

The next process is that of *fermentation* or *sweating*. This process is the most important one in the preparation of Cocoa. Unlike coffee the purpose is not only to remove the pulp of the fruit, but to change the character of the seed; in fact to develop that flavour and aroma for which cocoa is valued. It is a process which must be learnt by experience and cannot be easily described. It consists of sweating the cocoa by packing it in bulk for the required time, with occasional stirring should a temperature of 120° F. be exceeded. The time required for complete fermentation varies from 3 to 10 days with different varieties.

After fermentation is complete *washing* is carried out. This must be very thorough. *Drying* is then commenced. This process must be very gradual in the early stages, or loss of colour in the bean results. The later stages of drying can be carried on at a more rapid pace, and artificial aid can be used.

After drying the cocoa is *graded* into four sizes, and is then shipped.

LABOUR.

I find most people in this country refer to the labourer as the *poor* native, and assume that his conditions of labour are very

exacting, and not to be compared with the conditions which labour has secured for itself in this country. True, wages are very much less, but not in proportion to needs. The ordinary labourer can live on one-third of his wages, in fact on engaging new men we are always willing to feed them by agreement to a one-third deduction. The hours of labour are very much less than in this country. Most of our work is done as task work, and as soon as a man has finished his task he is at liberty to leave. In this way the best workers get away at noon, and hardly a man will be found on the plantation after 3 p.m. The men also have learnt the possibilities of strikes, and "downing tools" until a fancied grievance has been adjusted is by no means an unknown occurrence.



Loganberry.

THIS American introduction is the result of a cross between the black berry and the raspberry. The hybrid is to some extent intermediate between these two parents, and is a heavy cropper. It resembles the former in habit of growth, the latter in shape of fruit; but it is much larger, darker in colour, very juicy and acid, coming into flower about the end of May, and ripening its fruit in July. It forms

a most refreshing hot weather fruit and also makes an excellent preserve. But even from a decorative point of view it is not to be despised when seen, as at Harristown, growing on a wall 14 feet high and over 30 yards long, showing its large sprays of white flowers well above the dark-green foliage. When in fruit it is equally effective, besides giving a profitable return to the owner. As to aspect, it is not fastidious, growing well facing either east, south, or west. After fruiting, the old canes should be cut out and the young ones tied in their places. It is easily increased by layering the tips of the current year's growths, or by layering a growth its full length and cutting away a small piece under each joint before pegging down, and lightly covering with sandy soil. To obtain the best results it requires a moderately rich, well-tilled soil, giving each plant three to four feet apart.—W. WINSTANLEY.



COFFEE TREES IN FLOWER, 5 YEARS OLD, ON THE KIVU ESTATE, UGANDA.

Ornamental Hedges.

By J. W. BESANT.

THE utility of the ordinary hedge cannot be disputed, and the plants used for this purpose are well known. The very purpose of most hedges necessitates close clipping and a consequent stiff and formal appearance. As a rule, hedges of yew, holly and box, to mention evergreens, are used to form enclosures and shelter belts, as well as for dividing lines and boundaries. Other things, like thorn, hornbeam and beech are of frequent occurrence for the same purposes, and serve admirably for boundary lines.

It is now being realised, however, that for many positions something less formal may be used without sacrificing utility. Often a screen is wanted where there may not be space for a shrubbery: in such a case an informal hedge which will flower in season would probably meet the case. In other instances it may be necessary to divide the more utilitarian portion of the garden from the more natural part, and in this case the free-growing hedge will have a softer effect than a stiff, closely-clipped one. In the same way it is often necessary to shut off back roads and paths which are used for rough work, such as heavy carting, and are consequently not so well kept as the more prominent drives and paths—here an informal hedge may be made a thing of beauty as viewed from the front of the house or from the pleasure grounds.

Many and varied are the ways in which the informal hedge may be used to soften and enhance the view, and equally varied are the shrubs available for the purpose. It needs some courage at first to break away from long-established customs, but with the better knowledge and appreciation of the true beauty of plants it will not be long ere formality in hedges will vanish with the rest of the topiary of other days.

There are nowadays so many beautiful shrubs that our choice is considerable. Perhaps the most popular flowering shrub of to-day and for many years past is the Rose. Among Roses there are many well adapted for our purpose, but they will be found among the older kinds noted for hardiness, vigour and sweetness, rather than the fine form of their individual flowers: the Japanese *R. rugosa* is an instance—hardy, vigorous, continuous flowering, fruiting freely in autumn, and requiring little pruning. A very effective hedge might be formed of its several varieties. For a low hedge the Scotch Roses would be of great value: their dense growth and free-flowering habit give them a value we cannot over-estimate. Then there are several among the old China Roses which are vigorous enough to form hedges round the Rose-garden or other enclosure: *Gloire des Rosomanes*, with clusters of crimson flowers produced continuously through the summer, is an instance, while the rose-red *Fellenberg* is equally vigorous and attractive. The *Penzance Briars*, too, are vigorous, free-flowering, and beautiful: these form a fine informal hedge, and succeed with but little pruning where they can be allowed a fair amount of space.

Among other shrubs which may be recommended for informal hedges are the Barberries.

Not the least among these is the common Barberry, which when left to itself grows into a dense bush, flowering freely in early summer, but most charming in autumn when loaded with clusters of coral-red fruits. The beautiful hybrid *B. stenophylla*, illustrated before now in *IRISH GARDENING*, would make a delightful hedge, and, being evergreen, would be good alike in winter and summer. It is one of the most free-flowering shrubs in gardens, and always a source of admiration. Darwin's Barberry, too, although inclined to get leggy with age, is a handsome shrub, easily kept within bounds by occasional pruning. It is of stiffer habit than the previous kind, but for some positions this might be no detriment. The Barberries are a large family, containing species of very various habit and growth. One of the most vigorous is *B. Chitria*, which will easily form a hedge 12 to 15 feet high. Although not conspicuous as a flowering shrub, this is still a handsome plant, with bronzy-green leaves more or less evergreen. Among the newer Barberries from China are some of great promise both for beds and hedges. *B. Prattii*, an erect growing shrub, is now clad with innumerable clusters of pale-red fruits immediately noticeable among other kinds. Another upright grower of dense habit is *B. Gagnepainii*, an evergreen of handsome appearance. The Barberries are a most interesting lot of shrubs, and have great claims on the attention of gardeners on the look out for free-flowering informal hedges.

Cotoneasters are useful shrubs for all purposes, and there seems no reason why several of the evergreen kinds should not be used for low hedges. Such species as *C. buxifolia* and *C. rotundifolia* would form an excellent dark-green background for flower beds and borders: while in their season they flower and fruit freely. Some of the newer species are of vigorous growth, and may yet prove excellent for screens and dividing lines. The fact that some of them spread their branches horizontally as well as vertically will be no barrier where softness of contour is the object desired: such kinds as *Dielsiana elegans*, *salicifolia*, and *Henryana* will be prime favourites when better known, and will surely displace the Cherry and Portugal Laurels, of which too many are used in unsuitable positions.

In favourable localities the Escallonias are beautiful shrubs of free informal habit, and lend themselves admirably as hedge plants. Perhaps the best is *E. macrantha*, a handsome evergreen with dark-green leaves and clusters of red flowers, produced through summer and autumn. In a moist, soft climate the Escallonias thrive and make huge plants, but they dislike cold, harsh winds. At Glasnevin, which is very exposed, they are frequently a sorry sight for some time in spring till more genial weather induces fresh growth and the old shrivelled leaves drop off or are hidden. In mild localities, however, near the sea and elsewhere, this species makes a glorious shrub, and can be used as a most effective screen. Other kinds, such as *rubra*, *punctata*, and the garden form known as *Ingramii*, are all handsome shrubs worth attention.

The hardy Fuchsias, too, are among the élite of shrubs, and, flowering as they do right into late autumn, are highly desirable. Perhaps the hardiest and best for hedge purposes is *F. Riccartonii*, a plant of garden origin bearing small dark-green leaves and

abundance of red flowers. It can be procured cheaply, being grown in large quantities by leading nurserymen, and is a most desirable shrub for any position. Another hardy form is *F. corallina*, also of garden origin, and of rather stronger growth than *F. Riccartoni*. It is not so hardy, however, and may be cut to the ground in severe winters, but grows away strongly in spring, making a fine autumnal display. *F. macrostemma*, often called *coccinea* or *grandis*, is also worth some consideration from gardeners in mild localities. Its only drawback is want of hardiness, coming as it does from S. America. Nevertheless, it will stand a good deal of hard weather without being killed outright, and, like others of its kind, recovers very quickly in spring and summer.

The dwarf double-flowered Gorse, though rather stiff in appearance, is yet so remarkably free-flowering as to merit inclusion. For a low hedge surrounding some special enclosure few shrubs are better. Thriving well in soil of very moderate quality, and needing little attention, it is a subject which might be used more freely.

A Lavender hedge is both useful and beautiful. Its place is more in the garden proper, where it may form dividing lines in the kitchen garden or be used as a background to borders devoted to choice bulbs or other plants. Rejoicing in a well-drained soil and a sunny position, it is a good plant to associate with other sun-loving subjects. Of similar nature, but stronger growing, is the common Rosemary, another old-fashioned plant of great merit as an informal hedge in a suitable position. Perhaps, also, the Jerusalem Sage (*Phlomis fruticosa*), with its grey-yellow leaves and whorls of yellow flowers, would be equally suitable, and it will grow four or five feet high, and is evergreen.

The well-known and much appreciated New Zealand Daisy Bush (*Olearia Haastii*) has claims on our notice for hedging purposes: neat of habit, dense of growth, and free-flowering, this should make a handsome hedge. The plants require practically no attention, and should not be clipped into round balls, as is sometimes done, as the plant is naturally shapely, and can hardly be improved. Vast quantities of this shrub are grown by nurserymen and offered at a cheap rate. It is particularly recommended for seaside planting, but proves very hardy well north in Scotland.

The Tamarisk makes a beautiful and effective screen, and forms a delightful background to a summer border of dwarf-flowering plants. It however requires some support, since to be effective it should be pruned hard in spring. A rough post and rail fence would be sufficient, and to this the main shoots can be secured, cutting in the laterals in early spring. In this way a dense wall of beautiful green is formed which is saved from stiffness or formality by the way plume-like growths which are characteristic of the Tamarisk.

Another New Zealander of rare value is *Veronica Traversii*, a shrub of good form, and usually flowering freely. With age the plants incline to become leggy, but this is easily remedied since quite old plants will break from low down when headed back in spring. This should form a good hedge—bold, but not too formal, and good alike in summer and winter. It is probably as hardy as *Olearia Haastii* and quite as beautiful.

Poinsettia pulcherrima.

POINSETTIA PULCHERRIMA is truly one of the best of the *Euphorbia* family. It has a few good qualities to recommend it: in the first place, producing its charming bracts of rich vermilion in the dull winter season, a colour seldom seen in any of our winter-flowering subjects.

Then again the plant adapts itself admirably for grouping with other suitable flowering or foliage plants in the warm greenhouse. A delightful effect may be obtained by mixing them with *Calanthe Veitchii*, both remaining in bloom for a period of two months.

To obtain good results a little more than ordinary care is needed in cultivation. Sudden changes in temperature in either direction will often cause them to lose their lower leaves, which gives the plant an unsightly appearance, severely diminishing the size of the flower heads.

Plants retaining their foliage till the end of the season is an indication of careful culture. Operations should commence about the month of April, after the plants have had their usual rest beneath the stage. They should be brought out and placed in a light position near the glass and well watered to produce cuttings. These should never be allowed to get more than two inches long. When taken off with a sharp knife close to the old plant, placed snugly in small pots filled with light sandy soil, they will root readily in the propagating frame. Much difficulty is often experienced in rooting cuttings that are allowed to get too long, consequently weak and often taken at a leaf-joint. So soon as the cuttings are inserted they should receive a good watering, afterwards daily spraying over to keep them from drooping as much as possible. Once they obtain roots they should be removed from the frame to a shelf near the glass for a few days to harden them off. Pots, four inches in diameter, should be prepared, thoroughly clean and well drained, ready for the first shift. The soil should consist of good fibrous loam with leaf-mould added, also plenty of good sharp sand. A close frame in a partial shaded position will suit them till the plants have taken possession of the new soil. Care must be exercised in watering at all times, as the plants resent extremes in either direction. Air should be admitted on all favourable occasions, and the plants kept close to the glass, as this tends to keep them dwarf and sturdy. As the season advances, the plants will require their final shift: this time pots six inches in diameter will be found quite large enough. Overpotting should be strictly guarded against. The compost on this occasion should consist of good fibrous loam with leaf-mould added, also a ten-inch pot full of dried cow manure broken up fine to the barrow of soil and a good supply of sharp sand well mixed together. Pot the plants moderately firm, give a good watering to settle the soil after placing them back in the frame. Once root action has taken place, air and sun should be admitted freely. The plants will only require shading during the hottest part of the day.

As soon as the cold nights begin they should be removed to their warmer quarters. A little feeding, alternately twice a week, with Clay's Fertilizer and soot-water will benefit the plants at this stage.

At the end of the flowering season place the plants in a cool, dry place under the greenhouse stage on their sides.

W. H. GREEN.

Hardy Stonecrops.

By R. LLOYD PRAEGER, B.A.

THE beautiful *S. pulchellum* has bright-green foliage and showy pink flowers, and it is peculiar among Sedums in liking a wet situation—moist peat suits it well. *S. hispanicum* (= *glaucum*), which may also be placed here, is a decorative little biennial plant with glaucous leaves suffused with pink, and pinkish blossoms.

Next we may group together a number of useful Sedums characterised by their flat, roundish leaves, half an inch or so across, stems more or less prostrate, leaves usually deciduous. The well-known *S. spurium* and *S. Ewersii* will serve as examples. *S. spurium*, which is often used for edgings, forms a tangled mat of rooting stems, leaves broadest at the top and toothed, flowers pink;

the variety *splendens*, with deep red flowers, is the form usually grown, and is much better than the type. The pretty *S. oppositifolium* is rather like a miniature of the last, with pink flowers, but the stems die back annually to a subterranean root-stock. *S. anacampseros* (= *rotundifolium*) is a quaint plant with straggling bare stems with roundish glaucous leaves crowded together near

the tips, and few dense heads of purplish flowers. *S. Ewersii* is a good plant with annual stems, with glaucous rounded leaves in opposite pairs, terminating in heads of pinkish flowers; the stems do not root, but die back annually to a short twiggly base. *S. cyaneum* is a smaller plant resembling the last, with reddish purple flowers and glaucous foliage. The handsome *S. Sieboldii*, which, with its variegated form, is often grown in pots, has arching stems clothed with glaucous leaves arranged in threes, and terminating in clusters of purplish blossoms. *S. kamtschaticum* has leaves like *spurium*, but the flowers are bright yellow, and the stem-system is like *S. Ewersii*. There is a variegated variety that makes one of the showiest of Sedums. Several other less known species also belong here.

Then comes a distinct group of Sedums, including the well-known Rose-root (*S. roseum* = *Rhodiola rosea*) and the Orpine (*S. telephium*). These have a very fleshy, sometimes almost tuberous root-stock, from which rise a number of leafy erect stems up to a foot or even two feet in

height. In *S. roseum*, *S. heterodontum* and *S. asiaticum*, the fleshy root-stock grows up, forming a number of leafless stems as thick as one's finger, from the summit of which grow annual leafy stems crowned with yellowish flowers. In *S. roseum* the leaves are broad and very glaucous, in the two others they are toothed and narrow, being in *S. asiaticum* bright green. *S. roseum* is a plant with many puzzling varieties, of which the most striking is *S. r. linifolium rubrum*, which has narrow green leaves like *asiaticum*, but untoothed, and flowers of a striking rich red-brown hue. A handsome tall yellow species is *S. Maximowiczii*, with stems rising annually from a subterranean root-stock and toothed green leaves. As in *S. kamtschaticum* the flowers turn red on fading on account of the bright colour of the ovaries. *S. aizoon* resembles the last. Next comes the familiar Orpine group, with erect stout stems,

1 to 2 ft. high, clothed with numerous broad leaves. *S. telephium* and *S. fabaria* are easily known by their masses of claret-red flowers, and crowded toothed leaves arranged in no particular order. *S. maximum* is a more straggling plant, with broad leaves in opposite pairs and greenish flowers. Many intermediate forms (varieties or hybrids) between these three species exist, and are



A GROUP OF *CORDYLINAE AUSTRALIS*

Planted at Warren House, Sutton, Co. Dublin, in 1892, by The O'Mahony of Kerry from seed ripened in Wicklow.

difficult to name. Then comes *S. spectabile*, the latest flowering and one of the finest of Sedums, distinguished by its pale-green glaucous foliage and very large panicles of pink flowers. It forms in time a large clump, and is a very effective plant for the front of the border, flowering late in September.

In the foregoing brief summary I have omitted several valuable plants which did not seem to fit in with any of the arbitrary groups. *S. dendroideum*, which is illustrated on p. 153, is a large shrubby plant, branching widely, with green fleshy leaves, about 2×1 inch; it is not hardy in cold places, and in some other places where it grows all right is a shy flowerer; but when clothed with panicles of its yellow Ragwort-like flowers it is a striking plant. *S. trifidum* is an interesting species. Root-stock subterranean, annual stems erect, up to one foot, bare below, with a number of broad deeply-toothed leaves surrounding the group of reddish flowers. *S. populifolium* is one of the most distinct of Sedums. It is quite shrubby, with many branching twiggly stems up to one foot in height, which produce in summer broad-toothed leaves

on long stalks and round clusters of pink flowers. *S. primuloides* is a rather recent Chinese introduction, with erect branching perennial stems a few inches high, crowned in summer with small broad-pointed leaves. The flowers are white, but it seems a shy bloomer. *S. obtusatum* is a good plant, easily known by its leaves. These and the whole plant are of the type of *S. album*, but the leaves widen to the rounded end so that they are pear-shaped in outline. The flowers are bright yellow, and the whole plant usually suffused with red. *S. spathulifolium* is of a more upright type, with slightly branching stems and glaucous diamond-shaped leaves suffused with red. The leaves are crowded above so as to form a loose flat rosette, and the flowers are yellow. The plant which is usually called *S. sarmentosum*, though it is not that species, is distinguished by

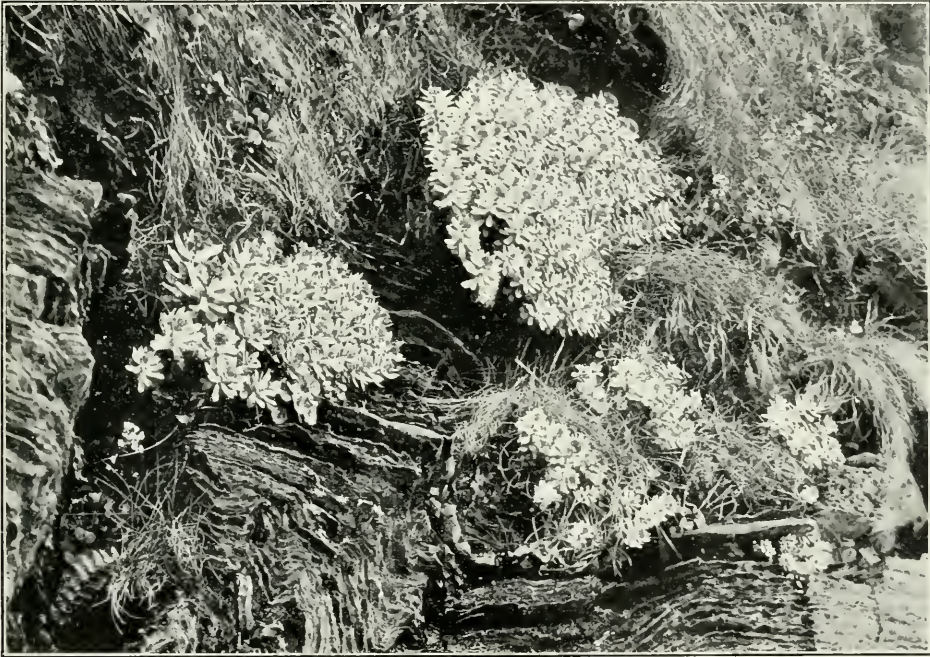
leaves), *dasyphyllum* and *brevifolium* (glaucous leaves).

SMALL CARPETERS.—*Album* and *anglicum* (green leaves, white flowers), *murale* (reddish leaves, pinkish flowers), *sexangulare* and *acre* (bright green leaves, yellow flowers).

MEDIUM SIZE.—*Ewersii*, *Sieboldii*, *oppositifolium* (all pink or purple flowered), *spurium*, *splendens* (deep red flowers), *kantschaticum* (orange-yellow flowers). *S. spurium* is the only one of these which spreads much.

LARGE, MOSTLY UPRIGHT.—*Spectabile*, *telephium* (red or purplish flowers); *Maximowiczii*, *Rhodiola*, *asiaticum* (yellow flowers); *populifolium* (pink flowers, shrubby), *dendroideum*, the largest of all (shrubby, yellow flowers).

BEST YELLOWS.—*Kantschaticum*, *Maximowiczii*, *acre*, *sexangulare*, *obtusatum*.



THE ROSE ROOT (*SEDUM ROSEUM*)⁷AT HOME, CLARE ISLAND, CO. MAYO.

its long prostate shoots, which grow a foot or so in the year, and bear throughout their length flat broadly lanceolate leaves. The flowers are yellow, on short upright stems. Lastly, we have two *Sedums* of quite different appearance from all the others, which even an experienced botanist, seeing them for the first time, would unhesitatingly call *Sempervivums*, so closely does their growth form resemble that of the well-known Houseleeks. These are *S. Sempervivum*, which has reddish leaves edged with green and striking red flowers, and *S. pilosum*, in which the leaves are crowded, incurved and densely hairy, producing a ball-like growth. The flowers are pretty, pinkish in colour. Unfortunately neither of these remarkable plants is perennial; they die after flowering.

I now give, in conclusion, a selection of *Sedums* under different heads, mentioning in each case a few of the best flowering, most interesting, or most useful species for the purpose in question.

MINUTE SPECIES.—*Lydium* (bright green

BEST WHITES OR PINKS.—*Album*, *murale*, *glaucum*, *pulchellum* (all dwarf creeping); *populifolium*, *spectabile* (1 foot).

BEST REDS.—*Spurium splendens* (creeping), *Ewersii*, *Sieboldii* (low arching); *telephium*, *trifidum* (erect, $\frac{1}{2}$ to 2 feet).

BLUE.—*S. cœruleum*.

GLAUCOUS LEAVED.—*Brevifolium*, *glaucum*, *dasyphyllum*, *spathulifolium* (all dwarf); *Ewersii*, *Sieboldii* (medium); *roseum* (large).

A considerable number of hardy *Sedums* which are in cultivation still remain unmentioned in this article, but I have already taxed the patience of my readers; what has been said will show the extent of the genus and give an idea of the character of the leading species, and may possibly help some rock-gardeners in choosing species to grow, or in naming plants already in their gardens—though to render effective aid in the latter direction much fuller treatment would be necessary.

Hints to Novices.

By R. M. POLLOCK.

ALL planting may now be done with safety—that is to say, the planting of fruit trees, ornamental trees, flowering shrubs, roses, hedges, &c. Once the plants have lost their leaves they can be moved without danger. If the fruit trees have been ordered, holes for them can be opened and everything prepared for planting. If on arrival of the trees the ground should be very wet, or hard with frost, it is better to unpack the plants, lay them in some spare corner, and wait until all frost has gone and the ground dried a bit before planting them in their permanent quarters. Some growers advise planting fruit trees with a slate underneath, on which the tree rests, so as to prevent any strong main roots going straight down into the soil; but if the roots are laid out flat at planting time, and if the grower takes an interest in his trees and notes the type of growth they are making, he will quickly know whether his roots are in good condition or not, and when he sees strong, coarse growth being made, few spurs, and light crops, he will resort to root pruning, and so find out exactly what class of roots his plants have, and check any that need it. Root pruning, however, should not be undertaken without full knowledge of what is wanted, as, like a great many excellent operations, it can be overdone. When a fruit tree, either against a wall or otherwise, shows signs of long, coarse, useless shoots, which when pruned only break away as strong as ever, and where few spurs are formed, and consequently there is a very small return of fruit, these are signs that the roots of the tree have become too strong, and require checking. To do this, open a trench round the tree about as far out from the stem as the main branches come; open this carefully, getting in under the ball of soil, and when strong, thick roots are met with, or roots which are going directly downwards, they should be cut, and so induce them to break out into tufts of fibrous roots. If the ground is firm and heavy, a few barrow-loads of lime rubbish mixed with the soil will benefit the tree. In the case of old trees, which are bearing poorly and have not had their roots attended to for years—probably never—it would, of course, be a very risky thing to root-prune the entire tree at one time, as the check to the tree would be considerable. Half might be safely done one year, and the other half another time.

Any ground not immediately required may be dug over and left in the rough state for use in spring. In a small garden this is seldom possible, as all available space is usually more than fully occupied.

All the bedding for spring should be finished as soon as possible, and all biennials, such as Forget-me-Nots, Canterbury Bells, Sweet Williams, Wallflowers, &c., should be planted now, and not left over until early spring. When planting these biennials or any other plants in a mixed border, avoid as far as possible putting them in straight lines. Clumps are far more effective; they are more satisfactory, because if one plant fails to flower, the others in the same clump will make up for it; also, if the plants are not very well grown, their deficiencies are not nearly so noticeable. Straight lines and ribbon borders are very effective in their right place, but they have to be

very well done, and when badly done they are only an eyesore.

Dahlias cannot be left any longer, and may now be cut, labelled, and stored away for the winter.

Tender plants, whose hardiness is doubtful, or new plants about which little is known, had better be covered if hard frost is likely. This can be done with either matting, sacking, or several doubles of old garden netting, or even with branches of some evergreens; but if the covering is heavy, it should be removed on fine days, so as to let all the light and sunshine possible get at the plants; it can be replaced again before evening.

Strawberry plantations will do well to be dug over and left clean and tidy for the winter.

Violets in frames will have to be carefully watched, and all damp, decaying leaves removed. Give plenty of air on fine days, and as long as the weather is bright the frames may be safely opened daily. In hard weather, extra covering put on the glass may be necessary, but it should be removed as soon as the temperature rises in the mornings.

GREENHOUSE.—The Zonal Pelargoniums put in in April will be fit for larger pots during the month. The older plants may be cut back and a batch of cuttings put in. Primulas will be showing buds, and if these flowers are not immediately wanted, the first blooms can be nipped out, so that the plants will be stronger and larger when the second flowers come. It would not be wise to do this to all the plants, and some might be allowed to bloom at once. Cinerarias will be showing flower too, and will require careful watering.

As the first of the Chrysanthemums go out of flower they should be cut down, placed in a bright, airy position so as to induce young, sturdy growths to come away. These growths, direct from the base, make the best cuttings, but if the plants are carelessly put away in a dark place, or underneath staging, where the light is poor, the growths, if they come at all, will be tall and thin, and be quite useless for cuttings. Give them water when they need it, and encourage them to grow as strong as possible.

Bulbs in bowls should be looked at. The Roman Hyacinths will probably be ready to come to the light, and as soon as the bulbs start to grow they may be brought out. If the fibre is dry give them a good watering, sufficient to moisten all in the bowl, but once it is well moistened further watering can be dispensed with for some time. This fibre is so prepared as to remain damp for a long period.



Clematis Flammula rubro-marginata.

THE sweet-scented Virgin's Bower is well known in many an old garden; climbing through a hedge or over an old tree it makes one of the prettiest, and at the same time one of the sweetest, of our September pictures. This variety, instead of making a snowy mass of tiny blossoms like the typical *C. flammula*, gives us a touch of red, which makes a pleasing contrast, while the scent is quite as powerful and sweet.

This Clematis is seen to advantage on a trellis or rustic fence, and will cover a space of 12 feet, or perhaps more, in time. Another still stronger grower is *C. paniculata*, a shower of white flowers and long sprays during October.

Fruit Conference

A CONFERENCE of fruit growers under the auspices of the Department of Agriculture was held in connection with the Fruit Show at Ballsbridge on Wednesday, October 22nd. Mr. T. W. Russell, M.P., Vice-President of the Department, presided.

The Chairman announced that His Excellency had another engagement. He therefore called on His Excellency to make a statement.

The Lord Lieutenant, who was cordially received, said he was very much obliged to the chairman for giving him an opportunity for offering an expression of hearty greeting and good wishes regarding the assemblage and its objects. These greetings might, he thought, well take the form of congratulation because of the manifestly important character and the admirable arrangements generally of the show which had been opened that afternoon. Even a cursory glance was enough to bring before their minds its value and significance. He was told that the number of entries was slightly smaller than that of last year, but against that it was stated that the quality of the exhibits in the main was if anything superior to that of previous years. Those who had paid any attention to fruit culture in Ireland would be able to take a sanguine view regarding this important branch of industry. They all knew how keen competition was in fruit as in other matters, but he was assured that the Irish fruit grower could hold his own with that serious item—American and Canadian competition. He wished to extend cordial good wishes for the success of the show and conference—a conference which was sure to evoke many practical suggestions and contributions to the thorough understanding of this most interesting and far-reaching form of enterprise.

The Chairman stated that the importation of fruit, as well as of preserves, into Ireland was very considerable, and had been increasing steadily in each case for a number of years. Much of the fruit so imported, and certainly the greater part of that which came to them in the shape of preserves, could be produced in this country.

RESULTS OF EXPERIMENTS.

In many parts of Ulster, more particularly in County Armagh, fruit is now regarded as one of the ordinary farm crops. With a view to developing a similar situation in other parts of Ireland, the Department had conducted throughout the country demonstrations on the growing of fruit on a commercial scale. The results of these experiments had indicated that many parts of the country were particularly suited for the production of the best class of fruit on a remunerative basis, but that the apple was likely to prove the most profitable class of fruit, market and labour conditions being too often unfavourable to the production of soft fruits. The result of all this work had been an enormous demand for the services of the County Instructors and of the Department's officers, and the Department had found themselves unable to deal with individual applications for assistance. They had accordingly, for some time past, recommended the formation of local associations or societies of fruit-growers, and had expressed their readiness to grant loans to such bodies for the purchase of fruit trees. Through these bodies they were also prepared to facilitate the grading and packing of the produce, and to assist in its marketing. In this connection,

he would like to emphasise the importance of a proper system of grading of every class of fruit, and of its despatch to market in suitable packages.

LOANS FOR PLANTING.

Another subject which would probably be dealt with was the question of loans for the planting of fruit trees. At the last conference he pointed out that farmers could obtain loans for this purpose from the Board of Works. He regretted to say that the facilities from this source had not been very fully availed of, whilst the demands on the Department's loan system, intended to deal with much smaller amounts, had been steadily increasing. This might, perhaps, be accounted for by the fact that fruit growers borrowing from the Department were entitled to a large amount of technical advice. In the case of loans granted by the Board of Works the Department were prepared to afford similar assistance. He reiterated the opinion which he expressed two years ago—that the farmers of Ireland were still to a very great extent neglecting a great opportunity in not giving time and attention to fruit growing, which might easily be made one of the great industries of the country.

Mr. James Donnelly (Moy) read a paper * on "Apples for Market, Varieties and Cultivation," in which he drew attention to the fact that Irish fruit growers were in competition with those of the United States, Canada, Tasmania, and other countries. As far as Irish growers were concerned, they should either keep pace with the times or stand aside. He agreed with a Tasmanian grower who said: "If you want to save your souls, watch and pray; if you want to save your orchards, wash and spray." Although Ireland could produce cooking apples that could not be excelled, they did not command second or third place in the English market. That was chiefly due to faulty packing and grading. He had seen buyers in Glasgow passing by Irish apples, which had to be sold for 3s. per cwt. less than English apples, although the latter were distinctly inferior.

Mr. Logan (Cork) said that he did not believe in the cultivation of the land so much. He himself was cultivating apples under grass, and he could show a fine collection of fruit. Any amount of fruit was lost in orchards because liquid manure was allowed to go astray. As regards the type of apple, he believed it was better, to select a few sorts and get a suitable apple to sell. A green apple was no good to anyone, and would only be a disgrace. Therefore it is better to grow a coloured apple. There were only three flavours in American apples. The Red Bramley was, he believed, the coming apple, and he thought that the smaller grades would be well able to compete against American apples. By getting quality in the smaller grades a good price could be obtained. His advice was: "Get as near to the American grade of apples as you can. If you do you will find them very profitable." He hated to see a man for ever going round with a knife cutting off branches. Better get a full-grown tree, and if it wanted cutting occasionally cut it moderately. Trees should not be grown too tenderly when young, as they would require fine treatment afterwards. Another good apple, in his opinion, was the Viscount Wolsley, and also the Hector MacDonald.

* The three papers read at the Conference are soon to be published in full in the *Proceedings of the Royal Horticultural Society of Ireland*, and may be obtained from the Secretary, 5 Molesworth St., Dublin; price 7d. post free.

Mr. Richard White (Gowran) complained that no provision had been made for packing large Bramley apples such as he grew. They were told that they should pack in standard bushel boxes. He suggested that the Department should treat growers as the Americans did. In America they had different sizes of standard boxes. As things stood at present in Ireland they were debarred from packing large Bramleys. If the Department could not provide for that, perhaps they would explain how to grow small Bramleys. The large ones could not be packed without putting a slip under the lid of the box. He had a box in the show, and anyone who liked could unpack it, but let him just try to pack it again! Another question which the Department should consider was the difficulty of getting barrels. He failed to get barrels in order to enter a competition for the show. There were only two firms who could provide barrels—one in Belfast and the other in Portadown. He wrote ten days before the show for two barrels, and he was quite prepared to pay the carriage, but he got a reply saying that the price was too short. The Northerners evidently did not want the Southerners to get too strong. Last year he had apples at Belfast show, but they were disqualified because the barrels had hoops. He thought it was very hard on these in the south to have to go to Belfast to get barrels.

Mr. Brown (Sligo) stated that by varying the packing in the bushel box almost any apple could be put into it.

Mr. W. White.—You will not get the weight.

Mr. Brown mentioned that the Americans were doing it. Three or four packs were recommended. He thought that more explicit instructions should be given by the Department in its pamphlet. They did not tell them about how to vary the packing. He wrote sometime ago to the Department on the matter, and after worrying them they sent him a magnificent pamphlet that had been issued by the Canadian Government. He suggested that that pamphlet should be widely issued by the Department.

The Chairman mentioned that there was one objection of which he could dispose. Mr. White thought that the packing barrels were only made in the north. The simple reason was that until quite recently apples were only grown in the north. By Mr. White's calling attention to the matter the Department would take a note of it.

Mr. M. J. Byrne (Dublin) did not believe in Mr. Logan's plan of allowing the grass to grow round the tree. It smothered the rays of the sun. All fruit trees should be carefully cultivated, and nothing should be allowed close to them. As to planting, the tree should be planted at the same depth as it was planted in the nursery. The tree should be carefully pruned and staked so as to save it from being blown about.

The Chairman said that they would like to know what progress had been made by those undertaking the Department's plots in the south.

Mr. O'Donnell (Piltown) agreed with Mr. Logan about the grass. He mowed the trees well over the grass. Anyone could see in the show hall the fruit that came from Piltown, and there was no reason to be ashamed of it. They in Piltown would continue their present methods. They sprayed twice a year.

The Chairman asked Mr. O'Donnell if he was satisfied that fruit growing was a profitable investment.

Mr. O'Donnell.—Certainly I had a very fair crop last year. I had about an Irish acre, and it yielded £75.

The Chairman.—It is gratifying to know that an Irish acre produces £75 in the market. What kind of apples do you grow?

Mr. O'Donnell.—There are different varieties, but the best we find are Bramley's and Lane's.

Mr. Donnelly mentioned that he sold an orchard at eight years old of less than three and a half acres for £200 without putting a hand upon it.

Mr. Traynor (Roscrea) spoke of the growing interest taken in the cultivation of fruit. He was a small grower of about one English statute acre. He was a business man, and fruit was largely eaten in his household, which contained about eighteen adults. After supplying fruit to the household he sold the remainder of the crop for £39. No one need be afraid of fruit culture. He believed in following out the plan he liked best. Everyone could adopt a plan for himself, and he could guarantee that they would all have fruit. The people nowadays were getting so educated that they must have the best fruit. There was one serious matter which he thought it right to mention, and that was that they had to wait to know that they were getting the apple that was named. They had to wait for two or three years before they knew whether they were getting the apple which they bought.

Colonel Guinness asked whether anyone present sprayed with sugar. In Louth, where he lived, they said they had no apples. He had a little garden, and he sprayed with sugar. The bees came to the trees, and he had now a large quantity of apples.

Sir Frederick Moore, in replying to points raised during the discussion, thought that they had lost sight of one of the main points of the paper, and that was to get at the most suitable varieties of apples. He complimented Mr. Donnelly on the excellence of his paper. It was one of the most thoroughly practical and useful papers that has been read at any conference, and there was hardly a point in it with which fault could be found. Hitherto it had been rammed down their throats that fruit growing did not pay, and that they were only flogging a dead horse. Now, however, they heard a different tale, for they found north against south vying with each other as to which got the larger price. He did not think that anyone would now doubt that apple growing was profitable. As regards cultivation, it all depended on the locality. They wanted to be very clear whether orchards were 100 feet above sea level or plain level. He stood up for the cultivated orchard and was opposed to grass. Those who started at first in the grass system were not successful, unless, like Mr. Logan, they were in most highly favoured districts where they could not help the trees growing. If they went to the south, west and east, and saw the successful orchards, they would find that cultivation with grass would be but lighting a bonfire for themselves. He thought it best for people who could afford to do so to start with trees two or three years old instead of maidens, as they were, to use a colloquialism, "vetted." It was the Department's object to see that the plants supplied were the plants that had been ordered. He thought that there was a great deal in Mr. White's remarks as to barrels, but he wished to point out that the Department had in no sense appointed two makers of barrels. The apples which Mr. White produced looked like the produce of young trees, and as regards packing it did present a serious problem. He was afraid that there would have to be two standards. The reason why barrels were made in the north was because the makers agreed to make

the particular size required. One of the great objects of the conference was to arrive at the best list of varieties to be grown. During the last two years he had made a census of apples grown in Ireland. Without naming any varieties, he had written to all the districts in Ireland and asked growers to recommend half a dozen of the best apples for marketing, half a dozen cooking, and four eating apples. Taking all the districts he got the following results:—Bramley, 100 per cent.; Lane, 100 per cent.; Grenadier, 80 per cent.; Lord Derby, 80 per cent. (three of these, Bramley, Lane, and Grenadier, were the most popular apples); Newton Wonder, 60 per cent.; Bismarck, 60 per cent.; Early Victoria, 60 per cent.; Lord Grosvenor, 20 per cent.; and Peasgood, 20 per cent. For eating apples the returns worked out as follows:—Worcester Pearmain, 80 per cent.; Beauty of Bath, 80 per cent.; Blenheim, 60 per cent.; Allington, 40 per cent.; and Cox, 20 per cent. He was not quite prepared to see Cox and Allington so low in the list. It was better not to plant too many varieties. Better make experiments in a small way, and never exceed six varieties without some very cogent reason. He wished to mention the changes in varieties that took place within a period of ten years. When they first started in the north of Ireland they told the Department that they were not wanted and that pruning was not necessary. Now, however, since interest had been awakened in the north and south, they were getting better results because they disregarded the old methods and were now spraying, pruning, and cultivating. Some years ago the men in the north of Ireland swore by Bismarck, Derby, and No Surrender, but since then they have adopted Bramley, Grenadier, and Lane, and they are dropping the others, including "No Surrender." Among eating apple, they favour Beauty of Bath and Worcester Pearmain, and they also mention Gladstone, Allington, and James Grieve. In the south of Ireland they grew Blenheim, Grosvenor and Scarlet Custard, but now they had Bramley, Newton Wonder and Lane's. Beauty of Bath, Allington and Cox were also being used. Amongst the failures in apple growing where they had been tried as orchard trees for practical marketing were Golden Spire, Lord Grosvenor; Stirling Castle, Gascoigne, Duke of Wellington, Peasgood, Cox, and Warner's King. He was speaking of course from a farming point of view as a general crop in an open orchard. The following were some suggested:—Langley, Pippin, Rival, American Mother, Lady Sudeley, James Grieve, and Golden Noble. These were the sorts that had been recommended, and information would be given about them by the Department. They should endeavour to avoid glossy apples, which were due either to injury by early frost or bad nutrition caused by too much water. As to sugar spraying, there must be something in it. It would bring bees—not only one's own bees, but those of the neighbours.

The afternoon session then concluded.

EVENING SESSION.

In the evening the chair was occupied by Professor J. R. Campbell, when Mr. W. Spencer, Loughgall, Co. Armagh, read a paper on "Insects Injurious to Fruit Crops." Stress was laid upon the fact that, like human beings, the weaklings are more likely to be attacked than the stronger ones, so that it is very necessary to keep the orchard clean by spraying and well up to the mark by

good cultivation. Moss, loose bark and lichen, also weeds and rubbish about the trees, will provide winter quarters for pests, and so render the spraying less effective. A long list of pests was given and the various ways of combating them explained.

A paper such as this should be explained partly by diagrams to have its full educational value, for many of those present, with the exception of the older hands at fruit-growing, seemed to be not much the wiser at the finish, in spite of some sparse notetaking.

Mr. J. W. Dunlop's paper on "Fungi Injurious to Fruit Trees" was a most interesting one. Mr. Dunlop confined himself to the fungi which had been a trouble to him in his own orchard, such as canker, scab, &c., and gave his own remedies and methods of prevention which he had found most efficient. Originality and thought marked the paper throughout.

Professor Carpenter emphasised the remarks made at the outset of the first paper referring to the importance of distinguishing between the various ways in which insects feed in orchards and in which the owner has to fight against them with success. Attention should be closely paid to the nature of the creature as well as to the damage which it does. To know the life history in detail very often gives us the key to the position in our battle against the enemy. The list of harmful insects given in the paper was a very good one. There was one insect which he would like to know whether Mr. Spencer had any experience of, and that was the Apple Blossom Weevil. In the records of Irish beetles it was noted only in three districts—Dublin, Belfast, and Armagh. If anyone came across that insect he would like to have a specimen of it. The Vapourer was another destructive insect, as also was the Apple Sucker. A good method of spraying to kill caterpillars was a mixture of arsenate of lead to be used in the spring when the petals have fallen and the fruit is set. The Pith Moth, which generally appeared every season, was an insect against which orchard owners should be on their guard. By making observations concerning insects everybody could help the practical fruit grower as well as the naturalist.

Dr. Pethybridge mentioned that Mr. Dunlop laid emphasis on the necessity of keeping plants fit, but he did not refer to a very large number of diseases. In the case of insect pests they had been favoured with a considerable number of details. It was interesting to notice that people were beginning to pay attention to diseases. Years ago if a tree were dying it was supposed to be caused by the east wind, and if an apple tree were dying it was generally attributed to bad soil. Owing to advances in natural research they were learning that more and more of these diseases were due to specific organisms, and that a great many diseases of plants were due to fungi. They could congratulate themselves that in Ireland they had not so many serious fungoid diseases as were known in other parts of the world, especially in the United States. Most of the diseases were so small that the ordinary grower could not see the various stages of growth, and it was difficult to understand their life history. There were certain stages in the life history at which serious attempts should be made to destroy the parasites. It was through twigs that the invasion of apple scab spread, and the first thing to do was to see that there were no affected scabby twigs. The methods suggested by Mr. Dunlop were extremely good. Spraying should

be done every year whether the disease was present or not, and it should be done even in a season which promised well. Those of them who were not growers found it extremely difficult to buy in Dublin a decent Irish apple. His advice to fruit growers was:—"Take your stuff from books and other stuff from experience and mix it with your own brains." They needed in this country a good deal more experimentation on these various remedies. Every grower should be an experimenter himself, on a small scale at any rate, and let the Department know his experience. It was only thus they could make extensive progress in their knowledge of these matters.

Mr. D'Olier stated that the worst foes which the fruit grower had to fight was the fungoid and not the insect. In Wexford recently he noticed that the James Grieve was the worst cankered apple in the whole orchard, though in his own orchard it was perfectly healthy. One of the worst forms of fungoid attacks he had found was mildew, which seemed to stop the fertilisation of flowers. He had not been able to stop it with spraying.

Mr. Brock (Fermanagh) said that the apple sucker was one of the very worst forms of insect with which they had to deal. There was one short period—viz., just before the blossoms opened—when it could be coped with by using a simple wash of paraffin emulsion. Another excellent spray was that composed of lime sulphur.

Rev. Mr. Martin thought that paraffin emulsion was a dangerous mixture to use in unskilled hands. Tobacco extract is a shilling per ounce, and one ounce will make ten gallons of solution, and in his case he found it was effective. He recommended the application of tangle-foot grease. If an efficient remedy could be got for black spot he believed that there was a great future for fruit culture in the north. He believed that the cure lay somewhere along the lines of lime sulphur. They wanted something that remained on the leaf.

Professor Campbell, in bringing the conference to a close, stated that the results showed that interest in fruit growing was increasing, and it was perfectly obvious that the country was awakening to the importance of the subject. They never before had had a series of practical papers as they had had at that conference. They had at last coming to the front the practical fruit grower. The experts of the Department had all been in the background on that occasion, and the practical men had come to the front. They had had a whole sitting devoted to the subject of insect pests and plant diseases. All that was encouraging to the Department and to horticultural instructors throughout the country. Now that they had got the practical men coming forward he thought it was time for the Department to bestir itself in research of fungoid. They were offering scholarships to young men to encourage them in scientific work. He hoped it would be possible to have their conference annually. He wanted to organise good exhibits to go over to Great Britain and sweep prizes everywhere, and thus assist the officers of the Department who were helping to sell Irish produce. If they could succeed in striking the imagination of the British people by carrying off prizes it would have an immense effect on that side of their work. He had no doubt that it would not be long before they succeeded in that work. Before dispersing they should accord a hearty vote of thanks to the readers of the excellent papers they had just heard.

The Month's Work.

The Flower Garden.

By J. H. CUMMING, Royal Dublin Society, Ballsbridge.



GENERAL REMARKS.—Lawns in most places may now get a final cut and the mower thoroughly cleaned and oiled before laying it aside. Leaves that accumulate thickly on the grass may be removed before they damage it; but during leaf-falling, I think it a great waste of time to daily sweep up every leaf, as is done in some places. The season should be taken into account by those who are so very fastidious and the "hands" employed at more important work. Outdoor Chrysanthemums that have not flowered, and have plenty of buds, may be lifted and put in boxes that have done service for tomatoes. Water at the roots and an occasional spray overhead will keep them fresh till root action takes place, and the flowers will prove serviceable later on. Early Roman Hyacinths that are under ashes should be examined, and when the growth is an inch long removed to a cold frame and gradually inured to the light before placing them into a warmer temperature to force.

LILYCS.—Everyone loves Lilies. Their gorgeous colours, size, fragrance, and variation in form render them the most useful of our bulbous plants, and are very easily cultivated.

One of the most beautiful we have is the old English White Lily, *candidum*. I have seen a lot of it in borders this autumn. It is thoroughly hardy, is not too particular as to soil, and propagates itself rapidly, and for weeks produces the loveliest white flowers imaginable. The *Davuricum* group of crimson, orange, red, and other similar shades are Lilies that will adapt themselves to almost any position or soil, lasting for years in the same spot. *Chalcedonicum* is still one of the best and easily grown. *Auratum*, of course, is the grandest of all the Lilies where it does well, but the others I have mentioned are most suitable for the ordinary herbaceous border and the ordinary individuals who want to add Lilies to their borders. Early planting is of the utmost importance, and when planted in autumn will flower the following year. Avoid dry bulbs. When received get them in at once. They like a rich friable loam and prefer a partially shaded situation. Bought bulbs for pots should never be exposed long to the air. The earlier they are potted the better they will do. The protection of a cool, airy shed is sufficient till growth commences in the spring.

VIOLETS in frames should have the sashes removed on all bright, dry days, and be kept clean and free from decayed foliage. For pot culture the double sorts are the best. Keep the side runners pinched into about two joints from the base. When they have well taken to the pots after being lifted they should be placed in a warm greenhouse for a few weeks. This causes the flower to take the lead above the foliage; then

brought back to a cooler house, where they will continue to flower for a long time. For successional lots the plants should be kept cool until three weeks of the time they are wanted. They should then be introduced to a warm temperature for a fortnight, after which a house of about 45 degrees will suit.

HERBACEOUS BORDERS.—This is the month when a thorough overhauling can be made in these borders. The use of hardy plants in the decoration of our gardens is yearly becoming more popular, and the reason for this is not far to seek, for where do we find another class of plants that gives such a variety of form and colour not only for a few weeks, but from February right on to November. In many cases the class of plants to be grown must be determined by the size and extent of the place. What is recommended for a good herbaceous border is good-sized clumps of one kind of plant in as large a variety as possible, so as to prolong the bloom over a good part of the year. Again, where it can be done, do away with the formal box edging and introduce the planting of Alpines instead. These in the front line will persist in getting out of bounds, and one or other is always in bloom, which one must stop to admire. The tiny *Linarias*, *Thymes*, *Sedums*, and the little *Erinus alpinus* are all suitable, and one has got tired of these straight formal box-edged lines. In the border, too, one may introduce such shrubs as Japanese Maples, *Prunus pissardi*, *Spiraea arifolia*. They all help to relieve the flatness. Lift the plants that require new positions, reduce old clumps that have got too big, and make the necessary clean up. Plenty of old rotten dung should be worked into the soil before any new planting is done.

ROSES.—The words of the late Dean Hole rise to my memory—

"If you would have beautiful Roses in your garden
You must have beautiful Roses in your heart."

If the ground has not yet been prepared, set to work at once; and if your Roses have not been all the success you hoped for, try again. Roses love good living, therefore a plentiful supply of rotten manure and soil cut from an old pasture should be worked into the ground by digging or trenching to a depth of at least 18 inches or 2 feet. Where the soil is very shallow it can be improved in this way, and in addition to the above add 4 ozs. of bone meal to each square yard. Firm soil and firm planting are great helps towards success, and early planting is half the battle. Spread 3 inches of manure litter over the bed after the Roses are planted. This keeps the soil and roots warm, encourages quick root action, and also acts as a protection against frost.

WINTERING BEDDING PLANTS.—The gardener has now an anxious time in providing winter storage for many things that will not stand severe frost. *Begonias* must be seen to at once. When lifted they should be gradually dried. An open shed, through which plenty of air is blowing, does well. When the tubers come readily away from the stalks it is time to store the roots in boxes, and placed in a frost-proof house all winter. Some dry sand or leaf soil thrown thinly into the boxes will help to keep the roots from shrivelling. Where *Lobelia cardinalis* will not stand outside it should be lifted and placed close together in boxes and covered with leaf soil. A cool frame or peach case will do to keep it safe.

Fuchsias, *Abutilons*, *Heliotrope*, *Pelargoniums*, *Streptosolen Jamesoni* are often used as standards

now, and take a considerable time to grow as such. These want a cool, airy house and the least possible amount of water all winter. Bedding kept in frames should in mild weather get an abundance of air and kept on the dry side. This strengthens the plants against a spell of frost or damp weather.

The Fruit Garden.

By D. McINTOSH, Gardener to Alderman Bewley, Danum, Rathgar.

VINERIES.—Continue with the cleaning of vine rods that are intended to be started in January. The pruning having been completed, remove the loose bark only from the rods, and as the work proceeds special care must be taken not to injure the buds at the end of the spurs. Next wash the interior of the house, including all woodwork, iron supports, wires, &c., afterwards applying the garden engine to complete the operation. If insect pests have been troublesome during the past season of growth, the cultivator will profit by washing the rods two or three times with a strong solution of Gishurst's compound, brushing it well into all cracks and crevices. Allow the house a few days to dry, during which time a suitable compost of soil can be made up, preparatory to surface dressing the border. Brush off all rubbish and loose soil from the border, and with a garden fork loosen the hard surface soil down to the roots, which ought to be found in plenty, within a few inches of the top. This loose soil should then be carefully removed and taken clean away. The fresh compost should now be brought in and placed on the top of the roots to the depth of three inches. If wet, allow it to remain loose for several days, when it can then be trodden firm and level over the whole border. The rods may be slung up temporarily until starting time arrives, when they should be bent down a little below the horizontal line with the view of causing the buds to break regularly.

PEACHES AND NECTARINES.—Early varieties may be attended to during this month. The first item of importance to be done is the pruning. Commence by cutting out all dead wood and weakly shoots. It is a mistake to allow the shoots to remain too thick; therefore, if it is desired to thin out further continue with the weakest shoots and also those that are badly placed. If the interior of the house requires washing down, this should be done thoroughly. Loosen the shoots of the tree from the trellis, and if thrip or red-spider have been present every shoot should be washed individually with Gishurst's compound, or any other approved insecticide. Be careful not to injure the blossom buds, which are so easily knocked off. In tying up the tree first secure the main branches with tar-twine, observing at the same time the proper balance of the tree. The smaller shoots can then be placed and tied in neatly with raphia. A nicely trained peach tree is always a source of admiration. Prick over the surface-soil with a garden fork, and then remove the loosened soil outdoors. The compost for the top-dressing of the border should consist of good fibrous loam, freely mixed with lime-rubble and a sprinkling of bone meal and soot. Having been laid on, tread it firmly when in a reasonably dry condition.

PLANTING.—If the weather be favourable for this operation, now is a very good time to commence. Whatever kind of fruit trees or bushes it is desirable to plant, the ground should have

been trenched some weeks previous to the actual time of planting. However, given good weather, the ground can be prepared and planted during the month. As to the application of manure while trenching is being done, a great deal depends upon the nature of the soil—whether heavy, medium or light. If of a heavy, retentive nature, it should be arranged in trenching the ground that the top spits be always kept on the top. To throw it down in the bottom of the trench means that the roots of young trees will have a great tendency to reach this good soil, instead of being kept near the surface. The result is that vigorous wood-producing roots are formed, consequently the tree will bear little or no fruit until these roots are cut or pruned back and others prevented from going downwards. Light soils should be heavily manured, distributing it evenly as the work of trenching proceeds. The ground having now been prepared, open out holes at least one foot broader than the roots will cover. Before planting replace some of the finer soil in a mound in the centre of the hole and set the tree upon it. If the roots are in any way jagged or torn cut the ends clean off with a sharp knife and shorten back all downward roots. Spread out the lowest roots carefully on the mound and scatter a little fine soil over them, then another layer of roots, adding a little more soil, and so on, giving the tree a small shake now and then to let the soil run between the fine roots. This having been done add a little more soil, tread in firmly, and fill up slightly above the surrounding soil. Each tree should be fixed to a stake to prevent it being damaged by winds. Be careful that the stake does not chafe through the bark.

POT FRUIT TREES.—If the potting of trees has not yet been done every effort should now be made to complete that operation. It will then be desirable to have the pots arranged in their winter quarters. Do not remove any leaves that still cling to the trees, but use the syringe every morning, and this practice will suffice both as regards helping the leaves to fall and also assisting the development of the blossom buds. Covering material should be got in readiness in case of severe frost occurring.

The Vegetable Garden

By J. G. TONER, County Instructor in Horticulture, Co. Monaghan.

JERUSALEM ARTICHOKE.—This excellent white vegetable fills the bill admirably in the way of variety during winter and spring. Good cooking, to be sure, will go along way in making it popular; and not only does it form a good dish when served with white sauce as a vegetable, but it also helps largely to make an enjoyable and nourishing soup. Just now the tubers may be dug out in the same way as the potatoes, and if convenient stored in a pit. Where only a small quantity remains to be dealt with a box of sand will serve to keep them in good condition. Intense cold does not usually harm them, but on the other hand exposure to air and light spoils the colour, which will be quite dark when cooked. Intending planters should give the preference to the white variety.

RHUBARB.—It is quite a common practice to allow rhubarb to look after itself. In the course of some years it begins to fail, the stalks are rather thin and tough, and not at all of the best flavour.

This also takes place sometimes even when top-dressings are occasionally given. The reason is due to its voracity. Any plant that possesses such a vigorous constitution and makes such large leaves and stalks, or should do so, requires an almost unlimited food supply. To afford this periodical transplanting and division of the crowns are very necessary. It can be done at any convenient time from the present until February, provided the soil is in good working order. Needless to say the new site requires to be deeply trenched and manured beforehand. The outside portions of the old crowns ought to be selected for planting.

ASPARAGUS.—Now that the grass, as the growths are called, have ripened, they may be cut down and removed. The opportunity can be taken also for cleaning and top-dressing. In regard to the former operation some little extra patience and care will be well expended on the complete removal of bad weeds, such as dandelions, crowfoot, and the like. They are not so easily dealt with as the annuals, but must be entirely removed, for in the case of the dandelions every little particle of root left behind will set up a flourishing colony on its own account. The persistency of the "buttercup"—as we called it when we were young and innocent—is too well known to gardeners all. As a rule, rank manure is not always suitable, but in this case no harm will result, but rather the reverse. So when the clearing process is finished a liberal covering of rich dung will prove most helpful. Seaweed where procurable is an excellent addition. In its absence a few handfuls of salt will prove of great value. It is applied before the manure is put on.

CLEANLINESS.—At the present season it is no easy matter to keep the vegetable quarters clean and tidy. In accordance with the time of year and the partial cessation of growth, dead and dying leaves other than those of deciduous trees appear on all sides: broccoli, Brussels sprouts, and many others contribute their quota in making the appearance of the vegetable plot anything but smart. The tidy gardener—and most gardeners are tidy, and all should be—will easily find an hour to collect and dig them into those plots that are being prepared for next year's crops.

ALTERATIONS AND REPAIRS.—A certain amount of depreciation is always taking place in the permanent features of the garden, and, of course, require looking after. One of these is the edgings, especially living ones. A wonderful variety of plants is used for this purpose: Boxwood, London Pride, Double Daisies, Violets, Strawberries, and even Parsley. Rarely will they be perfect, and an air of carelessness pervades that garden, be it large or small, where the bounds of the cultivated portions are not well marked off from the passages. Now is the time to remedy this and other defects that one so easily finds if willing to look for them. Did you observe how very easy it is to see such in your neighbour's gardens? And how glaring they were too!

MORE DIGGING.—When this has been done plenty of work in the way of preparing plots for next season's vegetables remains to occupy the busy and far-seeing ones. It is such who invariably have the best returns to show; and when spring comes it brings its own tasks; therefore, the forwarding of the initial stages will have a most beneficial effect on gardener and garden during the coming year.

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The Island of Woods

By A. E. MOERAN, Hamilton Lodge, Blackrock, Co. Dublin.

OF course every Irish born child should be taught something of Irish history, but the history I would chiefly have them dwell on would go away back behind those centuries of oppression, and rebellion, and treachery, and bloodshed that make such sad reading, back to the days of the Fianna and the Knights of the Red Branch, when the name of Ireland stood first in Europe as the home of chivalry, and of gallant deeds bravely done. And my history would teach us to know personally, as it were, those big upstanding, fearless-eyed men—men that scorned a lie as bitter dishonour, and that went straight onward by the strength of their hands; men that “fought, and sailed, and ruled, and loved, and made” our island, and very proud ought we to be to have such men behind us in our heritage.

With the story of her heroes the story of Ireland's great woods is inseparably connected. In them the fierce wild boar and the mighty Irish elk abounded, and provided sport worthy of their strength and valour. The great order of knighthood known as the Fianna were especially devoted to hunting, and to them belonged the famous Irish deer hounds so jealously and exclusively guarded for long, but now, alas! extinct.

And with the love of sport the love of the woods themselves grew in the hearts of these men of olden times; until in time the humbler people came to look upon the Fianna and their giant dogs as being the guardian spirits of the forests, and songs were made and sung praising the beauty and grandeur of these, and the name *Innis na Fidba*—the island of woods—became one of the names by which Ireland was known.

But long before that time, when the stout-hearted sons of King Milesius launched their galleys more than two thousand years ago from the shores of northern Spain, it was the report of this wonderful island of great woods and green pasture that had been seen by their

miraculously keen-eyed watchman far across the unfurrowed northern waters, that spurred them on.

Fair the island was, he said, beyond all lands yet seen by that roving race, and rich fields sloped up to the noblest forests ever seen by mortal man; and so, reckless adventurers all, they clawed out for sea room for those clumsy old tubs of theirs, and bore away north, wallowing through the trough of it, towards the low green hills and spreading woods of the Isle of Destiny.

And long and long before that time, when Ulysses in his fabled wanderings was cast, the sole survivor of his crew, on the shores of Eire, her queen, with a hospitality that made “Ogygia,” as they called it, famous in Greek legend, entertained him royally for seven years, and on his deciding to build a ship in which to take his somewhat belated departure, gave him an axe and led him “to where grew pine trees, rising high as heaven, long and sapless, and that would lightly float upon the hollow waves.”

Of course to meet the needs of a growing population all through our early history the green grass lands were being widened back to the hill sides, and to destroy the refuge of wild beasts and wilder man the pine woods were fired again and again. Increased security from these marauders permitted the grazing of cattle and goats, which in their turn ate down the seedling trees that might otherwise have perpetuated this great inheritance. Then, too, timber began to be of commercial value, and especially that of the great lowland woods, composed as they were of magnificent oak, and so the end came by degrees.

In many places the cleared land was brought under cultivation, and justified the sacrifice, but in others the slow black bog came relentlessly creeping, swallowing up the fallen trunk and buttressed root, and storing them for our

eyes to see the tree under which perhaps Diarmed the brave and Grannia the fair rested in their year long flight before the jealous wrath of Finn of Tara.

Of course the oak and the pine, our present "Scots pine," formed the bulk of these ancient woods, and we know that there were no conifers except the Scots pine in them, but it is strangely hard to say definitely whether some of the hard woods, such as the beech and ash, are really indigenous or only very early introductions. The ash and beech are both indigenous on the Continent, and Julius Cæsar, in describing his expedition into England, says that all the trees that grow in Gaul grow also there "except the beech and silver fir." He was wrong about the beech, as in England it is certainly indigenous, and he was probably wrong also in inferring that the ash was a native tree. In Ireland we had birch and alder, and probably one of the poplars, and yew, and holly, and hazel, but the oak stood out as pre-eminently the great tree of the forests, and the Druidical worship further enshrines it as something far different from any other tree.

I wonder how many of us realize that the "Yule log" we lightly speak of at Christmas time is the survivor of the human sacrifices to the Celtic god Yiaoul—kin to the Baal of the Canaanites—the charred oak logs from one of these cheerful ceremonies being carefully kept for the next, as is the custom in parts of England with the innocent Yule log.

The mistletoe was very rarely found growing on oak trees, but great importance was attached to it when so found. In times of critical danger the arch Druid, with vast preparation, made ceremonious search for this in the great oak woods, and on the success or failure of the search hung the fate of nations. It is, however, more than probable that our friend the Druid had a very good idea before he started out as to what he was going to find, as even in those days we hear of suspicions that he had himself privately "planted" the mistletoe before starting on the search party.

If we care anything for these olden time heroes of ours, whom kings delighted to honour, and at whose deeds of chivalry the world wondered, and to whom the Ireland they loved means a place famous for, and proud of, its noble trees and woods, does it not seem as if some sort of duty stretched down to us through the centuries that we should not go utterly careless of our squandered woods and treeless plains where once the great elk harboured.

Is there not some obligation on each of us? I think so.

Apples for Profit.

By FREDERICK W. HAMMOND.

LAST month I briefly reviewed the subject from the standpoint of the suitability of the soil, situation of the land and kindred questions, and in this article I propose to show what I consider one of the best methods of planting the selected land, always providing that one has a reasonable chance of security of tenure thereupon.

One of the great landmarks in the progress of fruit growing during comparatively recent years has been the introduction of surface-rooting stocks on which to "work" fruit trees. In former years, when budded or grafted upon the deeper rooting stocks, many of the varieties were a very long time in coming into profitable bearing; but now, with these surface-rooting stocks, all this is changed, and in five or six years from the time of working quite respectable crops of most varieties of apples and pears can be secured.

Naturally this has made a powerful appeal to the spirit of this age, when quick returns are almost essential in the conduct of business, but it is just a question whether the planting of whole orchards with trees upon the Paradise or Quince stocks has not been carried a trifle too far.

As many of such plantations are now beginning to get somewhat aged—fifteen to twenty years' old—it is being found that many of the trees are more or less worn out and valueless, and it becomes a question of clearing the land and planting afresh. This question has been brought into great prominence by one or two actions in the law courts, and it has been decided that at the expiration of such a period there is no tenant-right value in the trees if planted on surface-rooting stocks. If, however, a certain proportion of the trees had been of long-lived varieties grafted upon the Crab stock, when the time came for grubbing up and removing the worn out trees, the former would have just been reaching their prime and commencing to crop profitably.

I suggest, therefore, that varieties such as Bramley's Seedling, Newton Wonder, Blenheim Orange Pippin, Wellington, Lord Derby, and Warner's King should be planted as Standards from 24 to 30 feet apart, each way, and that the intervening spaces should be filled with bush trees on the Paradise, standing either 12 or 10 feet apart—that is to say, if the Standards are planted 24 feet apart a bush tree should be planted between each down the row, and a line of trees 12 feet apart between each row of Standards; or, if the Standards are 30 feet apart, two trees 10 feet apart can be planted between

each in the row and two lines 10 feet apart between each row

Suitable varieties for the bush trees are numerous; and it should be very easy to make a selection to suit the soil and also the markets catered for.

In dessert varieties, Beauty of Bath, Devonshire Quarrendon, Lady Sudeley, Langley Pippin, James Grieve, Worcester Pearmain, Cox's Orange Pippin, and King of the Pippins, all lend themselves very readily to the bush form of tree, and are amenable to the necessary restrictive treatment on the Paradise stock.

In cooking apples, Early Victoria, Early River's, Stirling Castle, Pott's Seedling, Bismarck, Lane's Prince Albert, Byford Wonder, and King Edward VII. can all be grown in this manner without getting out of hand, but it is probable that if the stronger growers recommended above for the Standard trees are planted as bushes on the Paradise on any good land that they will grow too rampantly and be inclined to get out of hand unless severely root-pruned pretty constantly.

As previously pointed out above, when some or most of these are getting torn out at anything between fifteen and twenty years from the time of planting, the Standards should be fine trees, with heads anything like 12 to 15 feet through and capable of bearing six to eight bushels of apples apiece.

Of course during the first few years, while the bush trees are growing up, the land between can be cropped in any way most suitable and convenient to the cultivator, either by planting currants and gooseberries pretty thickly for a catch crop for a few years, or strawberries can be grown, or indeed any other crop which does not unduly exhaust the land.

Space will not permit of any detailed instructions as to planting, pruning, spraying, and all the other routine work of a fruit farm, and a few general observations must suffice.

In the first place, good healthy trees only should be bought from a reliable nurseryman who has a reputation to sustain and to whom it would be ruinous to send out the filthy rubbish which is frequently sold by horticultural cheapjacks. A clean start is half the battle, and if the trees are at first free from mealy aphids, apple sucker, apple scab, &c., it will be far easier to keep them so than if one starts handicapped by the presence of many of these pests.

Another point is to keep the trees growing well by judicious pruning, good cultivation of the soil and a sufficiency of well-balanced manure suitable for the needs of the trees.

There is no doubt that a weak tree is far more susceptible to all sorts of diseases than a thrifty

one, hence the above caution to keep all the trees growing well.

At the same time care must be taken not to over manure with nitrogenous substances, otherwise a rank, soft, sappy growth will be produced which falls an easy prey to canker and many other fungoid diseases.

If disease of any sort should get a hold in the plantation, either from the presence of neighbouring neglected orchards or by other extraneous agency, vigorous measures should at once be taken to stamp it out. It is far easier and cheaper in the long run to go for any attack as energetically as possible, rather than to procrastinate and see what will happen if the disease be neglected.

Lime sulphur and Bordeaux mixture for fungus diseases, arsenate of lead for all leaf-eating caterpillars, and contact sprays like soft soap and quassia, or proprietary articles like Cooper's V¹, McDougall's No. 2, White's Abol Fruit Wash, for aphids, sucker, red spider, and all other sucking insects; these provide a range of spray fluids sufficient to cope for almost any emergency the grower is likely to meet, and if thoroughly and energetically applied at the first sign of any attack will be pretty certain to effect a cure.

Needless to say, a plantation planted on these lines should never be allowed to grass over, but be diligently cultivated whether bearing any catch crop or not.

Both in America and Australia the growers are far ahead of us in this country in orchard cultivating tools and rigs, making it possible to cultivate with a horse to within a couple of feet of the stem of the trees, even comparatively low bush trees, without doing damages to the boughs or badly barking the stems, as would be the case with such ploughs and cultivators and harness which we are accustomed to use here.

Careful choice of a suitable field, from the standpoint of situation and soil; careful selection of the trees, and the arrangement of the same, so that cross-pollination may take place with known self-sterile varieties, and very great carefulness in all the manifold details of cultivation, &c., will, I am convinced, still assure a good return from capital invested in apple growing in this old land of ours, though perhaps for a time it may have seemed that the game was played out, and that the future lay with the oversea growers in America and the Antipodes.

The competition which we have had to meet will in the end prove to have been of value to us in causing us to aim at a higher standard of growing, packing and marketing, and not allowing us to rest satisfied until it is attained.

Some Reliable Garden Roses.

By HENRY E. RICHARDSON.

WHEN I undertook these notes on bedding Roses I fear it was the flattery implied in the Editor's request which overcame my ordinary prudence, hence my excursion into the thorny path of doubt and differences of opinion always raised by the laying down of any selection for any purpose. However, I limit my suggestions to varieties *only*, the most of which I have grown for five or six years, and I include *only* Roses for garden and decorative purposes, therefore I count out all "Exhibition"—*as such*—which require special treatment or that coddling necessary to produce blooms of that perfection which, unfortunately for them, dooms them to an existence under torture and to an untimely end in an exhibitor's box.

As different climatic conditions and different soils naturally affect individual Roses, I may say my climate (Co. Antrim) is very damp and my soil rather heavier than is desirable—hence you will find very few "Teas" in my list.

The essential qualities of a reliable bedding Rose are, to my mind, a good constitution—free and perpetual flowering, good foliage, a suitable habit and height of growth, with immunity (so-called) from mildew and other diseases. I must therefore rule out most of the fine old Hybrid Perpetuals as not being sufficiently perpetual, and their growth, in most cases, is quite unsuitable.

Further, I select Roses which have a tendency to make their new summer wood from the base, not from a higher point on the old wood. These plants, of course, turn out, after some years, compact dwarf bushes. I find all the following varieties are possessed of, to a great extent, all the above qualities, but some qualifying remarks are made under some particular names. The approximate height may be considered as about 2½ to 3 feet, reckoning from the autumn height, after a fairly severe spring pruning, but some particular varieties are specially noted as being taller or dwarfer in habit.

The question on which everyone differs—the correct description of colour—is difficult; but to shorten these notes I must attempt some rough classification of colour.

WHITE (OR SOME SHADE OF WHITE)

A good pure white bedding variety has still to be raised, as most of the new, much-vaunted whites are magnificent as "maidens," but leave a lot to be desired in them as "cut-back" plants.

Frau Karl Druschki.—The best white, but is not very perpetual, and quite unsuitable; but when pegged down in a large bed is very effectual.

Molly Sharman Crawford (Tea).—Almost pure

white, but has a tinge of blue green, which changes to "Eau de nil"; a good variety, but may require some protection.

Mrs. Herbert Stevens (Tea).—Generally white, but occasionally shaded with peach; of a perfect shape, but rather thin; fragrant; one of the best decorative Roses, and exceptionally good in autumn. The foliage is sparse. I find it quite hardy.

REDS.

Triumph.—Dark carmine red, shaded darker on reverse of petals; very large; does not turn purple blue in sun; growth free and erect; quite the best of the taller reds; very fragrant.

General MacArthur.—Dark scarlet crimson; a fine Rose, but in hot sun the colour turns into an ugly purple; in my soil the points of the petals often have a "flea-bitten" appearance. I much prefer "Triumph," which stands longer as a cut flower.

Cardinal.—Bright cardinal red; free growth, but seldom exceeds 2 feet; an ideal bedding Rose; fragrant. The blooms are fuller than "Richmond," and petals a little shorter.

I cannot grow "Richmond," so I must leave it out of my list, though I do keep the "Richmond" Cripples.

Hugh Dickson.—The best of all red Roses, but too tall for garden purposes. I grow it with success half pegged along a low trellis. When the early bloom is over I cut out, at the base, all wood of the previous year, allow the new wood to grow erect, flower in autumn, and peg down in following spring. It is not wise to peg down more than three growths, and even then the plant will require special feeding.

Mrs. A. E. Corhead.—Bright claret red; rather an acquired taste in colour, but a fine grower, and specially good in autumn; opens well in wet weather; very fragrant.

PINK.

Caroline Testout.—A warm shade of pink; excellent habit; large full flowers; quite one of the best Roses for any purpose.

Mme. Maurice de Luz.—Deep rose pink; an unusual shade of colour; free habit; fragrant; I think requires root pruning after three or four years, even more than all other varieties.

Lady Ashdown.—Rose pink in the bud, but opens to a light pink; a very good bedding variety. If grown quite naturally the blooms are erect, but when disbudded for size she has a tendency to hang her head: liable to mildew and black spot.

Freiherr von Marechal (Tea).—Dark carmine Rose; the guard petals lighter; very full for a Tea; free habit; when cut the blooms stand very well in water.

Miss Cynthia Forde.—Very brilliant rose pink; a good grower, and flowers all through the season; one of the best pinks, and an excellent cut-flower variety.

Mme. Segond-Werber.—Vivid salmon pink, with silvery tinge; very long pointed petals; rather dwarf; does not open up well in wet weather, but beautiful at other times.

FLESH SHADES.

La Tosca.—Rather tall; silvery pink, opening out to rosy white; never out of bloom; especially good in autumn, at which season some disbudding should be done; makes quite a good hedge or

4 feet if some old wood is cut out, at the base, each year.

Pharisaër.—White shaded salmon; very erect; flowers freely in all weather; the best of this shade of colour; very good bronze foliage; stands well in water.

Mrs. Amy Hammond.—A blend of ivory white and amber; a new variety, and one of the best; flowers very full and pointed, but as the petals are "crinkly" they do not stand much rain.

Mdlle. Clarice Jouranville.—Pale silvery pink; very similar to "Mrs. Theodore Roosevelt," but more free both in flower and growth. I think it one of the best garden Roses I grow.

YELLOW.

Harry Kirk (Tea).—Sulphur yellow, but bleaches rapidly in sun; vigorous, but does not break from the base, and soon becomes a leggy plant; a good decorative variety.

Mme. Ravary.—Clear yellow with orange flush in the centre; bleaches soon, and in autumn is practically white; dwarf and stocky, so I find the stems too short for any effective decoration.

Lady Hillingdon (Tea).—Bright orange yellow; a colour which stands well in sun, but may turn to a fawn shade; a good grower with beautiful bronze foliage; good in autumn; cannot be surpassed for any kind of decoration.

Rayon d'Or (Austrian Hybrid).—A marvellous canary gold colour, which does not fade till the bloom is quite opened out; good glossy foliage, but awkward spines; with me does not exceed 3 feet, but may grow much taller.

Joseph Hill.—Yellow shaded carmine and orange; a good variety, but has a tendency to make a lopsided bush, throwing one very strong growth in autumn, a fault which I cannot check by any pruning.

ART SHADES.

Lady Pirrie.—A blend of copper salmon, opening up to all shades of soft pink. From every point of view I consider it the best garden and decorative Rose; lasts an extraordinary time in fresh condition. On November 4th, after some sharp frost, I cut a bunch fit for any show bench.

Mme. Melanie Soupert.—Pale sunset yellow, shaded with pale carmine; a most beautiful Rose with free growth, but, like "Joseph Hill," has a tendency to throw up one very strong cane in autumn.

Irish Elegance.—May be called a combination of apricot and orange, with a crimson tinge when in bud; unsurpassed as a decorative variety. People in England find it does not flower very well, but when moderately pruned, I could not imagine anything more free in flowering in its own climate.

Mrs. Alfred Tate.—Copper red shaded fawn and ochre; perfect shape; blooms and growth erect; a beautiful "dinner table" Rose.

THE POLYANTHA ROSES.

Orleans Rose.—Bright Geranium red, with a small peach centre.

Katharine Zeimet.—Pure white.

Marie Pavie.—White shaded pale rose.

All of very dwarf habit, and when they are better known I think we shall find fewer bedding Geraniums in our gardens.

I fear my notes are already too long, but I

would like to return to the so-called "immunity" from mildew, &c. In my opinion no Rose is immune—all varieties are, more or less, susceptible to infection. Do not wait to find out a bad case of disease. The spores of disease lie dormant in the winter, both on the plants and on the surface of the soil, only to germinate and spread in the early summer. Spray your plants early in the spring, even before the foliage buds have opened; spray regularly during the season.

Avoid "Crimson Rambler," the Rugosa Roses, and Sweet Briar hybrids; if you must grow them keep a careful eye on them, as they are all plague-carriers by nature, especially of "red rust" and "black spot."

If the Editor will allow some rather iconoclastic advice—do not spoil the appearance of your garden with the old-fashioned mulch of heavy strawy manure in the winter. At that season the properties of the mulch only excite the roots at a time when they should be at rest; it keeps the surface soil wet in mild weather, and in any hard frost the stuff is frozen on to the growths. I gave it up as a practice some years ago, and, as a test, I can say that out of over 1,200 Roses I have only lost nine in four years.

Again, do not be afraid to carpet or, at least, to edge up the beds with low-growing, surface rooting plants such as Viola, or small annuals such as *Leptosiphon*, *Nycteria* or *Fenzlia dianthiflora*. Such intruders do not rob much, if any, from a properly liberally treated Rose bed—all such planting to be done, of course, after the Roses have had their necessary spring stimulants.

Do not be satisfied by breaking or snipping off the heads of blooms which have withered or fallen. If you want to build up a compact and dwarf bush, cut back all these heads to a plump eye, in just the same way as you would cut a bloom, with a good stem, for decorative purposes.

Last of all, do not mix up your varieties in the same bed. If you do this your results will be a clash of colour and an uneven Rose bed.

The secret of all garden success is massing rather than variety.



Erlangea tomentosa.

THIS is a fine plant for the greenhouse which has only become known during the last few years. The mauve flowers are small, but numerous, and closely arranged in a head or corymb. It will last two or three months in full beauty, and the foliage is sweetly scented. It is propagated by cuttings and only requires the same treatment as other greenhouse subjects.

T. W. B.

Notes on a Wall Garden at Llandaff, South Wales.

WHEN my garden was planned I was very anxious to have a dry wall for rock plants, and eventually succeeded in getting one to hold up a small terrace in front of the house: it is about 30 yards long and 2 feet 6 inches high. The stones used, of irregular sizes, are of a local conglomerate of a good red colour, and loosely built together without mortar, so that plants can be put in, bigger holes being left every here and there for the larger ones. The wall faces south, and has a slight lean backwards: the soil behind is a heavy rich loam, and was not specially prepared.

All the planting has been done since the wall was made, and this is by no means easy work, as it is extremely difficult to do it satisfactorily and press the earth well home in the very small spaces between the stones, while on the other hand if these were left bigger it would destroy the character of the wall: in the larger gaps it is, of course, less difficult.

Weighing the advantages and disadvantages of a wall garden, there might be put on the side of the advantages—(1) the increased warmth from the more direct rays of the sun, the retention of this warmth by the stones, and, if facing south, the protection from the cold winds in spring that do so much harm: (2) the excellent drainage—no small advantage in a climate like we have here, where the average rainfall is about 41 inches, last year it was over 55 inches: (3) no earth to be splashed about on the leaves of the plants by rain.

The disadvantages are (apart from the difficulties of planting)—(1) slugs, woodlice and millipedes, which have an ideal place for hiding in and cannot be touched by V.T.H. or other slug traps: extremely unpleasant butchery at night with a pair of scissors and an electric torch after laying down patches of bran seems to be the only remedy. Last winter I destroyed nearly 1,000 slugs alone in this way. (2) The impossibility of giving any protection by glass against winter rains: the southerly gales here bring the wet, and would soon dash to pieces any contrivances

for holding glass. (3) The difficulty of watering: but once a plant gets established it seems able to hold its own against almost any drought.

As to the plants I have tried (and all those I name have been out for one winter and most for two or more) very high up on the list I should place *Convolvulus mauritanicus*, with its long-trailing stems and profusion of azure-blue flowers. *C. Cneorum* I am just trying: it flowered freely in the rock-garden for two years, but rotted away last winter. *Acantholimon venustum* is quite happy, and slowly increasing in a small crevice: this summer it had nearly a dozen spikes of bloom. *A. glumaceum* thrives well in the rock-garden, but one piece unaccountably turned suddenly brown and died this spring. I mean to try some now in the wall. *Spharalcea murra*, with its mallow-like deep pink flowers,

is almost too exuberant, as it has extended right across the path at the foot of the wall, the stems being five feet long. *Francoa sonchifolia* (from the R. H. S.) looks happy, and flowered well, but, as I believe often happens, the stems become fasciated (clubbing together of the buds, forming a normally big and flat stems) and the full development of the flowers was spoilt. Of the *Erodiums* I have *E. Reichardii* (quite happy, though by no means in the moist



DIANTHUS HYBRID, ANTIRRHINUM GLUTINOSUM AND ERIGERON MUCRONATUS.

On a dry wall.

sandy soil Mr. Meredith recommends in his invaluable book on "Alpine Plants"). *E. sibthorpianum* and *E. supracanum*, all I am sure would do well, but others of this interesting family, such as *E. guttatum*, *E. cheilanthesifolium*, *E. corsicum*, &c., I have in the rock-garden.

For profusion of bloom one of the best things is *Antirrhinum glutinosum*: it spreads itself out close against the wall like a mat, and was one mass of flowers, as the photograph shows. *A. sempervirens*, which is much like it, curiously enough did not prosper last summer. Apparently the sun's rays or the drought were too much for it, as the leaves curled up and withered away. *A. Asarum* is such a prodigious spreader in the rock-garden that I am afraid of introducing it into the wall, as it would smother everything.

Campanula muralis, though extremely free-flowering, should be introduced with caution and carefully watched, as it spreads with wonderful rapidity, and the long white roots get behind the stones and are very difficult to eradicate:

very similar in this respect to *Linaria pallida*. *C. gargarica*, especially the variety *W. H. Paine*, with a clear white eye, which I first saw at Glasnevin, and *C. pusilla* are much more dainty. I also have *C. isophylla* and *C. Vidalii*, the latter only planted in the spring.

Close to the *A. glutinosum* is a hybrid of *Dianthus cæsius*, which has formed a big mat, and blossoms freely. I have only tried one plant of *D. neglectus*, but it never seemed happy, and soon withered away. I must experiment with it again to see if it really objects to wall treatment the same as it does, according to Mr. Farrer, to the moraine. *D. graniticus*, practically the same as *D. deltoides*, there is no trouble with. Just below the *Antirrhinum*, and very much at home, is *Onosma taurinum*, with its splendid golden drops. I had no proper success with it till I tried it here, but now the winter does not affect it. *Eriogon mucronatus* near by is an extremely satisfactory plant, as its habit is so graceful, and it remains in flower nearly all the summer; it is still covered with bloom now, in the middle of October. *Hypericum reptans* and *olympicum*, and *Coronilla minima* are excellent, lying close up against the stones and flowering freely.

Of *Primulas* I have *P. marginata*, *P. Clusiana*, *P. tyrolensis*, and *P. Heerii*, the last two only put in this spring; and of *Saxifrages*: *S. lingulata* Bellardii, *S. sarmentosa*, *S. lanuginosa*, and *S. aizoon rosea*; but the last two seem to find the heat of the stones rather trying. *Othonna crassifolia*, on the other hand, revels in it, as might be guessed from its very succulent leaves: a curious and attractive plant, though the small yellow flowers do not make much of a display. Cuttings, which strike freely, must be taken in the autumn and kept under glass, as the cold and wet and the attacks of slugs are too much for it in the winter. *Erimus alpinus* too I used to lose in the winter, but when grown in a chink of the wall I find it a true perennial.

Other things to be noted are *Veronica Cataractæ*, *Micromeria montana*, *Santolina pinnata*, *Iberis gibraltarica*, *Sedum Stahlia*, *Sempervivums*, which flourish abundantly: *Saponaria ocymoides*, *Alyssum citrinum*, *Aubrietias*, which form great mats from nearly the top to the bottom, and *Helianthemums* "in [variety," as catalogues say.

JOHN E. WILLIAMS.

Winter Spraying of Fruit Trees.

THE humid atmosphere of Ireland is so favourable to parasite growths, such as moss and lichens on fruit trees and bushes, that winter spraying is now recognised as an essential routine in profitable fruit growing. Clean and healthy-looking bark is of the first importance in the welfare of fruit trees. Trees under good cultivation do not get coated with parasitic growths so readily as those that are neglected and stunted from starvation by grass or rank weeds interfering with their food supply. It is waste of time and money growing trees if the necessary precautions to protect them from the ravages of insect and fungoid pests are neglected. The fight against insect and fungoid pests seems, however, to be a

stiff uphill struggle with some growers. This state of affairs is very largely due, in some cases, to old and worn-out trees that are heavily bearded with parasitic growths being allowed to remain as nurseries for the propagation of pests, to be carried by the wind to better-cared-for trees. The remedy for such trees is to cut them down and burn them or first remove as much of the lichen as possible with hoes or other scrapers, and then give a thorough spraying



ANTIRRHINUM GLUTINOSUM.

On a dry wall.

with the following caustic solution:—2 lbs. caustic, soda, 98 per cent., to 10 gallons of water.

As an efficient winter cleanser of fruit trees and bushes that are otherwise reasonably well cared for, I prefer commercial lime-sulphur, which is now easily procurable in quantities to suit all. It can be obtained in 40-gallon casks at nearest railway station at 1s. 3d. per gallon. Trees affected with scab should be immediately sprayed with one gallon lime-sulphur to 20 gallons of water. If American blight is present, use it at a strength one gallon of lime-sulphur to 15 gallons of water. Applied late in spring I have found it a most effective remedy for mussel scale. In applying winter spray be sure that every part of the tree is thoroughly damped right over the smallest twigs. Apply it on a calm, dry day, and unless the trees can be thoroughly damped at the first spraying watch for a change of the wind, and finish on the opposite side when the wind may suit. If the trees are affected with scab give a second winter spraying just before the buds begin to swell.

If a small lot of trees has to be done with a Copper Knapsack sprayer, first rub some thick grease over the inside of the sprayer to prevent the lime-sulphur corroding the copper. With reasonable care in greasing the inside of sprayer and washing it out with clean water every night there is very little risk of injuring the copper. Copper Knapsack sprayers are now procurable tinned, for use with lime-sulphur. They can also be used for Bordeaux mixtures. Where much spraying has to be done, I find that hand-power sprayers do the work most effectively and most economically.

I know some growers who still stick to giving an occasional winter cleansing with lime-wash, and the condition of their trees compares very favourably with trees sprayed with stronger caustic washes.

PETER BROCK.

Holly, Ivy and Mistletoe.

"In times when Arthur ruled the land
As ancient legends tell,
The ivy was a garden lad
Who loved a lady well."

SURELY such inspiration could only have come from the spirit of Christmas. Odes to evergreens are not common among poetic warblings. Even the mystic mistletoe has not, that we are aware, ever inspired the melody maker into chanting its virtues. True, we know "the mistletoe hung in the castle hall," at least we have heard so often enough to obviate any wish to dispute it; but that, after all, is but a bare statement of fact, further flights of fancy being promptly shunted on to the next line: "the holly branch shone on the old oak wall"; but, indeed, our subject seems to have received scant courtesy from the muse. We are told the name is derived from the Anglo-Saxon word *holegn*, or holy-tree, so it is no novice in its association with the festive season.

OLD CUSTOMS.—Time honoured, we are told is the custom of Christmas decorating with evergreens, by which we greet the great Christian festival, and only, in fact, a page out of the pagan past. Our ancestors, if we will own them as such, appear to have been folks of strong belief, some second-sight, and, withal, practical, the evergreens they thus employed being for no mere decorative purposes, but as a propitiation to the spirits, good or bad, who then, apparently, were rather meddlesome with mortals. But even in our own day—early days—there was a good deal more spirit investing the decorative schemes when pretty well all the village rustics, young and old, lugged in green boughs and branches on Christmas Eve to the old church galore, and fixed them pretty well as they liked, all of which has given way to high art, with possibly considerably less heartiness.

¶ The Mistletoe seems sufficiently evergreen to obviate ever withering or custom stealing its infinite virtues and fateful responsibilities. Unless for affections of the heart, of course, it is no longer the medicinal agent reputed to have been availed of by the Druids, who, doubtless, credited so remarkable a plant with peculiar powers in their mystic rites.

Tradition, anyway, has it so, but that it is still indispensable to us is evident in the large quantities imported annually at this season. From

France alone a few years ago one season saw as much as 2,300 crates of about one hundredweight each consigned to London.

OUR GRIEVANCE.—One might conclude in fact that the peerless parasite was some tender exotic that would not grow in the Green Isle, when as a matter of fact our humid climate is admirably suited to its production. But it is an old grievance, and presumably will remain as such until our colleens positively and patriotically take the matter up seriously—no larking—and join in a sympathetic strike by refusing osculation under any but bushes bearing the brand "Real Irish," which, perhaps, they will find not only equal to the imported article, but actually superior in flavour. As a curious and interesting plant, too, apart from utilitarian purposes, a bush is always welcome in the garden.

We are aware that many try to grow it, and fail by simple reason that immature berries are used for the purpose. Berries for this purpose must mature on the growing plant until February or March.

Ripe berries rarely fail in germinating a certain percentage of seeds if macerated on the bark of an apple tree, and are protected from birds by tying a bit of muslin over them, germination taking place in about three months, when the spear-like growth intuitively turns to the bark and pierces it for a foothold. One will not, of course, penalise their prize apple tree for this purpose, and their is something very peculiar in the influence of the parasite on its host inasmuch as instances have been recorded in which, after a growing plant of mistletoe has been cut clean off the tree, tiny kissing bushes have subsequently sprouted from pretty well all over trunk and limbs. Our earliest recollection of the mystic plant was a bush on an apple tree in an old dame's cottage garden which never berried, owing, as she told us, to its being a "Man-Mistletoe." Perhaps it was, anyway it was one of the sexes of this dioecious plant living out its life in single blessedness, for male and female flowers are borne on different plants. Was it not, by the way, the subtle influence of this plant which beguiled a bashful young "Meenister" into asking if it was "Kistomary to cuss the bride"?

BERRIED THINGS.—It is a matter for surprise that among seasonable berried subjects the showy and easily grown hybrid *Pernettyas* are not oftener met with, as their simple wants are surely well worth catering for. We shall never forget the lovely display at Straffan many years ago: fine bushes profusely clustered with big berries ranging from white on through pale pink and deep crimson to rich dark plum-purple, but apparently the plants eventually came under the influences of the limestone, and suffered to all but extinction. As berried things, too, some of the *Coton-easters* can scarcely be overpraised, and that *C. horizontalis* can behave so well in this direction came as a revelation on seeing far-extending growths on the walls of a building at the Royal Dublin Society's premises, Ballsbridge, where fan-like sprays, gracefully free of the main growths, were thickly studded with the coral-like fruits. *C. microphylla* is, of course, always good, and the rampant growing *C. frigida*, too, with its pendant clusters, is very conspicuous in most County Dublin gardens—rather overdone, in fact.

In conclusion, in the words of the old carol, "God rest you, merry gentlemen, let nothing you dismay."

K., DUBLIN.

The Removal of Large Tree Roots.

ON most large private estates, and in many public parks and gardens, the necessity of getting rid of the roots of large trees very often arises. The trees may be blown down during storms, or for various reasons they may have to be felled. As a rule, the trunk and branches are easily got rid of. If the timber be sound it will probably be disposed of in the usual way, but if in any way faulty or decayed it is only fit for firewood, and can be sawn up for that purpose. The stump or root, however, has generally to be removed, and as it may probably, in the case of large trees, weigh several tons, it is no easy matter to accomplish this. In the neighbourhood of buildings, where blasting is out of the question, much labour is entailed in the task. Resort may have to be made to planks and rollers, with probably horse haulage and a large staff of workmen, to effect removal. By means of wedges and much labour, something may be done to reduce the bulk to movable size, laboriously breaking off portions, piece by piece, but with hard wood the process is a long one. Nevertheless, when it can be done, the stump may then be removed to some open space and finally demolished by blasting.

At Glasnevin, where a good deal of blasting is done most winters, Nobel's dynamite is found very safe and satisfactory. Here it is preferred to gunpowder, being more powerful and perfectly safe when reasonable precautions are observed.

Only a careful man accustomed to the work, and who can be relied on to take no risks, should be put in charge of the operations. If the stump is sound—that is, not split or decayed in the centre, and of moderate size—one borehole will be sufficient, but on this point no definite rules can be laid down. The cartridges used here are about $\frac{3}{4}$ of an inch in diameter and about $3\frac{1}{2}$ inches long, and for these an inch and a half augur hole will be wide enough. The borehole may be from a foot to 15 inches or more deep, according to the depth of solid wood to be split, and it may be straight down or slanting in the direction of greatest thickness, as where a thick side root may have descended. The hole made with the augur should

be cleaned of all loose chips to ensure the dynamite resting on the bottom. One, two or more cartridges may be put in a charge, but only one at a time, squeezing each home separately with a wooden rammer. It cannot be too strongly emphasised that iron should never be used in squeezing dynamite, and the cartridges must always be soft enough to squeeze easily. If they are used in a hard condition the shock of squeezing may cause an explosion with lamentable results. Having inserted the requisite number of cartridges the next operation is to cut a piece of fuse, the length being regulated by the depth of the hole, but always long enough to give the operator time to get out of danger before the explosion takes place. The open end of the fuse is then pushed into a detonator cap until it reaches the fulminate right at the lower end of the cap, and it is essential that the fuse does reach the

fulminate, otherwise it may burn out without exploding the cap, and a misfire occurs, always a unsatisfactory and dangerous state of affairs. The open end of the cap must then be squeezed to the fuse with a pair of pincers to prevent it coming off. A primer cartridge, which is about half the length of an ordinary one, and like it wrapped in paper, is now opened at one end and the cap with fuse attached is



PREPARING A BEECH STUMP FOR BLASTING.

pressed into it about three-quarters the length of the cap. The open end of the paper is now drawn up round the fuse and tied in position with a piece of twine. The primer with fuse is now gently lowered into the borehole until it rests on the dynamite previously inserted, but it must not be squeezed down. The hole is now filled in round the fuse with tamping consisting of fine soil or sand, and the charge is ready for firing. All workmen, except the man in charge who fires the fuse, must now get out of danger and place themselves round about the scene of operations so as to prevent any straggler from penetrating the danger zone. When all are safe the workman left at the fuse now proceeds to light it with a fusee match, and immediately the powder is properly burning he too must quickly get to safe quarters. The length of time elapsing between the firing of the fuse and the explosion varies, of course, with the length of the fuse, but no one should be near the stump a second after the fuse is lit.

The accompanying illustration depicts the stump of a very large beech tree, felled here last winter, with a workman preparing the charge. J. W. B.

Hints to Novices.

By R. M. POLLOCK.

ALL wall plants, plants on trellis work, poles or pillars should be firmly tied up, otherwise the high winds, and possibly snow, will tear them away from their supports, and very often injure them to such an extent that they have to be cut back, and so several years' growth is lost. One of the most lovely spring flowering wall plants is the white *Clematis montana*, but it is a very rampant grower, and if against a house is very difficult to keep in check, and this can only be done by cutting out some of the many long growths during the summer. This plant makes far more growth than is wanted for a good display, as the flowers are produced on both old and new wood, so that the removal of a few of the young shoots would never be noticed or missed. The pink form of *Clematis montana*, known as variety *rubens*, seems less rampant in growth, but it varies considerably in the depth of colour, but the good forms are a very pleasing shade of soft pink, and the stems and leaf stalks have a reddish tone.

Roses on walls, such varieties as *Gloire de Dijon*, *Reine Marie Henriette*, *Mrs. W. J. Grant*, &c., can have the young shoots shortened slightly, and tied well up to the wall. Such varieties of the rambling Roses as *Dorothy Perkins*, *Crimson Rambler*, *Excelsa*, *Tea Rambler*, *Blush Rambler*, *Lady Godiva*, and many more which make strong shoots from the very base, need only have the old wood removed where it is too thick, and all the young growth kept, as it is on this young wood that the best flowers for next year will come, and it is not even advisable to stop them—that is, to cut their tops.

A very effective hedge, where plenty of space is available, can be made by planting the *Penzance Briars*, most of which have the Sweet Briar scented foliage. These Briars will do in poor soil—soil which is quite unfit for growing most Roses—and they will require very little pruning. There are two reasons why these should be more grown, they flower among the earliest of the Roses, and the colours of the various varieties are glorious, and they are also covered late on into the winter with brightly coloured “hips.”

All pruning of fruit trees should be started and got through as quickly as possible, as when it is done and all prunings cleaned up and burnt, spraying may be done. Never prune any tree—fruit trees or flowering tree or shrub—without knowing where the flowers and fruit should be borne, and then prune so as to encourage the special growth to bear fruit. In the case of fruit trees—apples, pears, sweet cherry, apricots, plums, damsons, red currants—the fruiting wood is the short stubby growths known as “spurs,” and these come on the old wood. On such trees as *Morello cherry*, peach, and black currant it is all on the young wood—that is, the wood made during the past summer—that the fruit is got. Never prune in very frosty weather, and for the gardener's own sake do not prune in the wet.

In the case of those fruit trees, fruiting on spurs, it must be remembered that sufficient of the young wood should be kept to form the tree. These trees can be had in many different types—standards, bush, pyramids, espaliers, fan shaped, horizontals, and cordons—and wood to form these shapes must be kept each year, even at the expense of the fruit, until the tree is some years old.

Planting in Uganda.*

THE authors are pioneers in the agricultural development of Uganda, and this work represents ten years of their experience in the virgin forest of Africa. Uganda is progressing rapidly, and yearly more land is taken up by planters, so this book will be very useful, as it provides a reliable guide to all that pertains to the growing and marketing of Para rubber, coffee and cocoa.

In the first chapter we learn that the region which at present attracts planters lies along the northern and north-western shores of the Victoria Nyanza, situated on the equator, but about 4,000 feet above sea level. Tempered by this elevation and the proximity of the Victoria Nyanza Lake the temperature is never extreme, the mean maximum is 80° F. and the mean minimum 62° F.

The rainfall and altitude in other tropical countries might deter planters, but with Uganda soil and conditions, planting has been proved a commercial success.

Mr. Brown tells us that in Uganda Para rubber trees reach a size suitable for tapping—i.e., 16 inches girth at 3 feet from the ground—in five years from the time of sowing. This compares very favourably with results obtained in other countries where Para is largely grown. Light tapping when trees are of the above size has been proved to give remunerative results without injuring or retarding the growth of the trees. Cocoa commences to bear when the trees are five years old, and is said to yield good results up to 50 or 100 years. The crops gathered in Uganda are very favourable when compared with those obtained in Trinidad. Coffee bears its first full crop when three years old, and continues bearing up to the eight year or twelfth year.

In Uganda a coffee plantation yields two main crops a year, and the trees when in full bearing have been found to give 2½ lbs. in parchment or 2 lbs. of cleaned saleable coffee per year. One pound was considered a good crop in Ceylon before the culture of coffee was made impossible by the ravages of the coffee leaf disease. This disease is said to be indigenous to Uganda, so possibly its attacks on plantations will be less virulent than in Ceylon.

There are two varieties of *Coffea arabica* grown in the country called “Nyassa” and “Bourbon,” while the natives grow *Coffea robusta*.

The book is full of practical information and gives guidance as to the choice of land for plantation and deals with the crops from the time of raising seedlings in the nursery until they reach the producing age. Then comes the collecting of the crop, the machinery required for cleaning or preparation, the cost of establishing plantations and estate management.

Professor Dunstan, Director of the Imperial Institute, has contributed the introduction, while Mr. George Massee concludes with a chapter upon Fungoid Diseases.

The book is well got up and illustrated, and should be a boon to African planters, and no doubt will be largely read by those in the United Kingdom who are interested in Uganda companies or properties.

* “Planting in Uganda,” by E. Brown, F.L.S., and H. H. Hunter, L.L.D., with forty-two original illustrations and two Maps. Demy 8vo, price 10s. 6d. net. Longmans, Green & Co., London: The Talbot Press, 89 Talbot Street, Dublin.

The Month's Work.

The Flower Garden.

By JOHN H. CUMMING, R.D.S., Ballsbridge

LAWNS.—No better time than the present could be selected for renovating and levelling lawns. Except during frosty weather the sod is in a workable condition, and goes together again easily after lifting. Declevities in a lawn look unsightly and hinder the mower from making an even surface after cutting. Bare patches under trees can also be returned now. When at this work have a good supply of fine soil ready for use to bring up to the level all holes that have to be made good. Replace the turf and use the hand-roller to bring the surface into a smooth condition.

WINTERING BEDDING PLANTS.—Efforts are often made by amateurs who have no glass to keep Pelargoniums over the winter. This can be successfully done if a window can be spared. Pots are better than boxes for the plants. A bow-window having a south aspect will do splendidly. After housing the plants they should have no more water than is sufficient to keep them from drooping, and that will not be much, unless where strong fires are kept. Over-watering is a great cause of trouble to amateurs, especially during the dull days. Do not be afraid of letting the soil get dry round Pelargoniums. When it is quite dry give a good watering some fine bright morning, and then withhold water until the soil becomes dry again. On fine days if the trouble is taken to place them out of doors for a few hours, so much the better for the plants.

CHRYSANTHEMUMS.—These are plentiful now, and where late varieties have been grown great care will be necessary to keep them clean and to prevent damping. Never water plants or damp the floors and staging in the evening, and ventilate as freely as weather permits. Cuttings for big blooms next year require to be put in towards the end of this month. For the usual bush or decorative class February is quite time enough. When the old plants are cut down place them in as light and cool a place as possible, the object being to ensure good sturdy cuttings later on. I should like to impress on those whose space is limited that lovely little plants in 5-inch pots can be got to flower at this season by striking the cuttings the previous May. Going through Messrs. Ramsay's Nurseries, Ballsbridge, lately I noted hundreds of Chrysanthemums in 5-inch pots with several buds on each just opening into flower. By this method of striking tops late, and confining the roots to small pots, dwarf heads of flower can be obtained, and are also most serviceable as house plants.

VILLA GARDENS.—The bulk of these do not admit of much variety of treatment. Their average size is small at the best. The front portion is usually a small plot of grass with a circular bed cut in the middle. The front railing is usually backed with a privet hedge, and the border round the enclosure is filled with Wall-flowers for spring, replaced in summer with scarlet Geranium and yellow Calceolaria. Year by year the same programme follows, and the neighbours copy the example. Might I suggest as a variation that the privet hedge gives place to *Fuchsia Riccartonii*. It grows quickly and is beautiful all the summer and autumn. In the borders, why not plant some Roses, and to keep

up a succession of bloom, plant an October flowering Chrysanthemum between each Rose. Then for variety of colour during a good part of the year what flower yields a better return than the Viola, which can be planted as a ground-work to the Rose and Chrysanthemum. Setting aside the Rose as the leading feature, what could be more charming than the stately fragrant Carnation or the lovely Gladioli or Irises, that afford such a variety of colour! Then we have the Petunia and Begonia. Anything almost would be a relief from the hide-bound system under which villa front plots are treated at present. The straight edge of the path could be nicely broken up by inserting some stones and planting the lovely purple Aubrietia and the double white Arabis. If front walls require covering, then plant *Ampelopsis Veitchii*, charming in summer and gorgeous in autumn, and giving no trouble when once established, while if there is room a purple Clematis and a rambler Rose would complete the picture.

SOIL.—Where borders are not planted for a spring effect a good opportunity is now offered to improve their condition. When a poor shallow soil has to be dealt with trenching or deep digging is of first importance. Some heavy soil should be added to mix with it, and more manure should be applied than is necessary for better soils. A cold heavy soil should have the contrary treatment: old lime rubbish, road grit, or any light sharp soil added and mixed with it, instead of much manure, will help to improve it. The border should be turned up with a rough surface to the winter's frost, and in early spring hot lime sprinkled over the surface and pointed in will prepare a finer and more healthy staple for small seeds such as Annuals.

GENERAL REMARKS.—Persistent November rains, rendering the ground unworkable, have retarded the duties that one would like to see done during that month. Fortunately December may be considered the quietest month of the year, and therefore available for bringing up any arrears of work. During open weather the moving of trees and shrubs should be proceeded with. When replanting make the holes wide enough to accommodate the roots when fully spread out, and where the plants are tall be sure and tie leaders loosely to a stout stake or with a light rope to a peg hammered into the ground. Winds are prevalent during winter, and do much damage to newly planted things not securely tied. Shrubbery planting may be considered more or less permanent, and in work of this kind one should be imaginative. We should aim to cut off the view of such things as are unpleasant and to bring in vistas containing such things as go to improve life, and around which cluster pleasant associations. It is easy to plant to secure special effects for a particular season, but in shrubbery borders it is well to try and obtain something that will interest the whole year round. Plants will naturally suggest themselves to one who is familiar with lawn shrubs, and it is one of the pleasant things about such borders that the owner can impart much of his own originality to the methods of arrangement. Life at present in the flower garden is quiet, and one can take stock of past failures and successes. Experience is a dear teacher, but this and careful study is the means of pointing out the defects in any undertaking. To those who have kindly followed my notes during the past months I trust they have been helpful, and now offer them my best wishes for a Happy Christmas.

The Fruit Garden.

By D. McINTOSH, Danum, Rathgar.

VINERIES.—Houses in which the grapes are all cut should be taken in hand at once as to pruning, cleaning and washing down, &c. This is the best time of the year to do the work of cleaning thoroughly, especially if any insect pests have been present during the past season of growth. Nothing is more annoying to the anxious cultivator than the presence of red spider or thrip in the early stages of growth, and I need hardly say that when once any of these pests appear they are most difficult to eradicate. Bunches of grapes hanging in bottles in a cool, dry room must be looked over frequently, and the bad berries carefully cut out with the grape scissors. If this attention be neglected, one berry will soon affect another, and the bunch within a few days will become irregular and unsightly. First early vines will be commencing to grow. The night temperature should be gradually raised to 60° by the time the bunches are visible, with a day temperature of 75° when the weather is bright. Allow the atmosphere to become well charged with moisture and syringe in the afternoon of bright days at closing time until the vines come into flower. Rub off all weak shoots that are not wanted as soon as they are formed, leaving only the two strongest shoots to grow on each spur. Later, one of these must be removed whenever it can be seen which has the best bunch of grapes.

LABELLING.—A matter which will require immediate attention after planting is that of securing the names of the varieties planted. It is always well, in the first place to take a plan of the plantation, noting each row with the varieties planted in the same. This plan should be carefully preserved in case of any accident to or loss of the labels in the orchard. The most convenient and interesting method of labelling is to have each variety distinctly named in full, the best label for the purpose being one of cast-iron, with the names in raised characters, plain and indelible. This should be attached to a branch of the tree by lead wire, care being taken to leave a sufficiently large loop to allow for the growth of the tree.

THE BEST TIME TO PRUNE.—There is some difference of opinion as to this point, but theory has to give way to practice and probabilities to possibilities. To those who have large plantations to deal with it is not possible to do it all at one time. The work has to be extended over a considerable period, and be performed according to labour available and as other work will allow. It is usually commenced on the fall of the leaf and continued through the winter months, but where it is possible to get it done in a comparatively short period, there is no doubt that the safest time to do it is after the turn of the winter and before any signs of growth have commenced. In some seasons when the weather is favourable to late growth, which is followed by immature and badly ripened wood, and when the pruning under such circumstances is done in autumn, the severe winter following will damage much of the wood and cause gaps and vacancies in the trees, whereas if the pruning is deferred until the spring, any such damaged wood can be removed and the sound wood selected for retention. Therefore, where pruning has to be commenced in autumn, select the hardest kinds and the best ripened wood to operate upon first.

The Vegetable Garden.

By J. G. TOXER, County Instructor in Horticulture, Co. Monaghan.

PROTECTING CELERY.—Those who value the supply of this excellent vegetable might take some simple precautions for its protection. Litter is often recommended, but it is not always easy to obtain, nor to keep in place when procured. A few 9 or 11-inch boards laid along on temporary supports are neat, effective and handy. They may with advantage be slightly sloped to one side so that heavy rain, which often does more harm than frost, may be thrown to the side.

WHITE TURNIPS.—Occasionally the more forward ones may be pulled and laid in the earth in a convenient place. This will be found a great convenience during frosty weather. They do not lose in plumpness or flavour by this treatment. As some growth takes place until winter is well forward, more space is afforded for the development of the backward ones.

FORCING VEGETABLES.—Another task for this month is the getting together of materials for forcing. People do not appreciate forced rhubarb when there are plentiful supplies in the open. At the same time there is no doubt that early dishes are highly valued by all who can afford to grow or buy the making of them. Fresh stable dung with a liberal mixture of tree-leaves, when kept together for a while and turned over about three times, is the best agent for pushing produce like rhubarb and seakale along. The safest method for the amateur is to cover the rhubarb crowns with boxes or small barrels, having the boards of the top end when they are inverted quite loose and only laid on, and then place the heating material 18 inches thick around and above them in the form of a cone. Seakale, however, is differently treated as a rule. Coal ashes, sand or turf-mould is usually the first covering medium. Such may be at least 12 inches above the crowns of the plants. It is in this that the blanching process takes place. The hot material is then laid on as for rhubarb.

PLANNING WORK.—A suitable time now presents itself of mentally marking out where next year's crops will be located. A better way still is to make written notes. All then comes comparatively easy in the busiest season. Nobody knows so well where the shoe pinches as the wearer. And every garden owner and every gardener knows better the particular requirements in each case than anyone can tell him. It is quite astonishing what amount of good produce can be squeezed, so to speak, out of a limited space when such is properly and wisely made use of. This cannot be carried out to the best advantage unless the plans are well laid and in good time.

THE ROOT CROPS.—Parsnips, carrots, and beet require above all a fine soil. It must or should be rich too, but the richness should be a mellow richness. Fine soils do not abound in all gardens. As a matter of fact and regret, they are found in comparatively few. It therefore becomes the gardener's duty to make more or less stubborn soils as suitable as possible. In dry, frosty weather much in this way can be done. And just by the simple process of digging repeatedly and turning up fresh surfaces to benefit by the action of the weather. By such little and simple attentions a world of good is done, and by degrees fairly good samples are unearthed from a hitherto grudging material.

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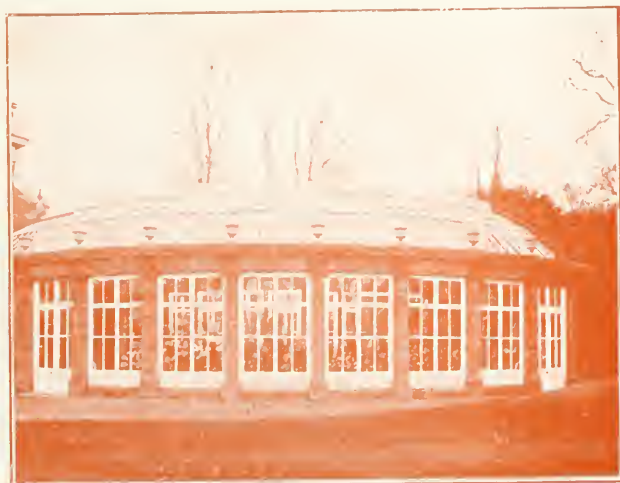


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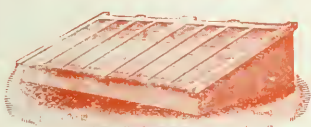
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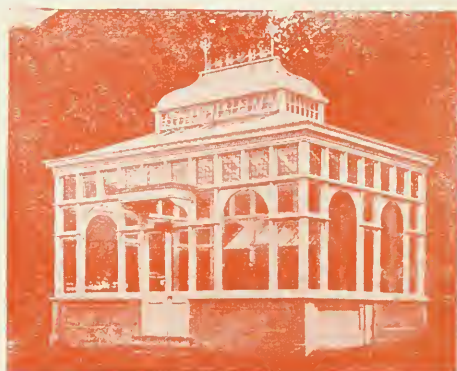


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National Rose Society.

HONOUR FOR MR. GEORGE DICKSON, V.M.H.
The thirty-sixth annual meeting of the National Rose Society was held in the Holborn Restaurant, London, on Tuesday, December 17th, when there was a large attendance of members.

After the reading of the annual report and the usual routine business, Mr. Frank Cant, Mayor of Colchester, seconded by Rev. F. Page Roberts, moved that the "Dean Hole" Memorial Medal be awarded to Mr. George Dickson, V.M.H., of Newtownards, who had done as much or more than any other man during the last thirty years to introduce new Roses. Mr. Cant said there was no greater honour the Society could confer, and the proposal was carried unanimously, and with great heartiness.

The new recipient of the Hole Medal (now in his 81st year) is the veteran head of the Dicksons of Newtownards, who have done so much to beautify the gardens of the world with Roses of colourings and varieties which were only indeed visionary twenty-five or thirty years ago.

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Correspondence.

SIR,—I was much interested in reading the account of *Cotoneasters* in the last number of *IRISH GARDENING*. I entirely agree with what the writer says as to their beauty and usefulness, and there is one advantage that he does not mention—that they are without exception quite hardy.

Although your list would appear pretty exhaustive, I find that I have no less than 18 species or distinct varieties growing at Aldenham which you do not mention. Therefore to complete the catalogue of these interesting plants you may think it worth while to publish my list, namely :

C. acutifolia var. *villosula*.

C. horizontalis var. *perpusilla*.

C. Zabeli (with dullish red fruits, for which I recently obtained an award of merit from the Royal Horticultural Society).

C. Dielsiana.

C. Dielsiana var. *elegans*.

C. divaricata (with very bright red fruits and a graceful habit, for which I recently gained a First Class Certificate).

C. salicifolia var. *floccosa*.

C. lupchensis.

C. Dammeri var. *radicans*.

C. moupinensis.

We owe all the above to one or other of the expeditions of Mr. Wilson to China.

I also have :—

C. acuminata var. *pendula*.

C. rupestris.

C. tomentosa.

C. species from Turkestan.

C. pyrenaica.

C. racemiflora.

C. racemiflora var. *orbicularis*.

C. racemiflora var. *Meyerii*.

I should add with regard to the species which you describe and justly praise under the name of *C. humifusa*, that though it has only been such a short time in the country that some collectors are still unacquainted with it, yet its name has already been changed, and it is now known at Kew as *C. Dammerii*.

One of the features of the system of nomenclature adopted at Kew is that never mind how widely spread and well known and appropriate the name of a plant may be, no one can depend on its being retained, and at any moment it may be discovered that some obscure person gave an unknown name to the plant a fortnight before it received the one universally recognised, whereupon a change in nomenclature takes place to the general confusion, and it is obvious that this process may be repeated.

VICARY GIBBS.

Aldenham House, Elstree.

[While thanking our correspondent for his notes on *Cotoneasters*, I would like to point out that *C. Dielsiana*, mentioned in his list, is only another new name for *C. applanata*, which was described last month. Also *C. pyrenaica*, which is sent out by some French nurserymen as a new species, is nothing more or less than our old friend *C. congesta*, sometimes known as *C. microphylla glacialis*.—ED.]

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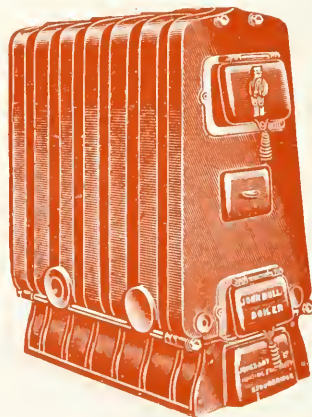
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TO THE EDITOR.

SIR.—Your correspondent who writes suggesting that the winning apples and pears at the Irish Shows are grown under glass is, I venture to think, under a misapprehension with regard to the apples at any rate. Taking Belfast Show we find that in four out of the six collections of apples, and in a good many of the single dish classes, the 1st prizes were awarded to exhibitors from this district, with all of whom I am personally acquainted, and in a position to show that they possess no facilities for growing their fruit under glass. At Clonmel Show this applies to all the winning exhibitors, and your contributor W. T. in his interesting article on this Show says:—"There is no Fruit Show in Ireland where finer apples are exhibited." At the Great Autumn Fruit Show in London an exhibitor from this district whose trees are all in the open garden—not on walls even—with ten entries gained seven First and one Second Prize. In conclusion, I venture the opinion that it is not possible to obtain under glass that particular bloom and finish which is characteristic of the apples grown in two or three favoured districts in the South of Ireland. I am well aware that under the artificial conditions of an orchard house, apples of great size and a nice red colour are obtainable, but they are generally dull, and lacking in that brightness which I believe to be caused largely by exposure to the weather, and especially by the fluctuations of temperature which obtain in September.

PILTOWN GROWER.

Catalogues.

MACKEY'S GARDEN MANUAL FOR 1913 is well illustrated and of clear type. Vegetables take precedence in the catalogue, and all kinds that are of value are described, with many useful hints as to their culture. Two pages are devoted to the Herb Garden, while another describes the treatment of Lawns. Under the title of "The Flower Garden," both hardy and greenhouse flowers are arranged alphabetically, with many beautiful illustrations. The time of sowing and the treatment afterwards of the young plants is given, so that those who have a garden should get the Manual and use it as a guide.

MESSRS. WEBB & SONS, The King's Seedsmen, Wordsley, Stourbridge, send a copy of their Spring Catalogue for 1913. Last year this firm added still more to its laurels by winning gold medals at the international and other leading shows. The great and continued success of the firm testifies to the excellence of their seeds. The catalogue is a large and handsome one, exceedingly well illustrated, and easy of reference, and maintains the high order of previous issues. Peas are well figured and numerous varieties described, including some new ones; then follows very good lists of all vegetables and flowers grown in the garden and greenhouse, with sound cultural directions. A useful page deals with the making and renovating of lawns.

KELWAY'S MANUAL FOR 1913.—Years ago the Langport nurserymen made a name for themselves by hybridising and raising new and improved varieties of such noble flowers as the Delphinium, Gladiolus, and the Paony. Their present manual shows that they still hold a foremost place for all hardy flowers. This manual of horticulture runs to 350 pages, and it is a reliable and informative guide to the many good things sold by them, with descriptive and cultural directions. The illustrations of hardy plants are very numerous, and one could not wish to see better specimens of plants or natural groups, while the coloured plates add great interest. The manual deals with Alpine and herbaceous plants, Roses, shrubs, greenhouse plants, bulbs, flower and vegetable seeds.

ROLF MULLER & Co., The Nurseries, Carterton, Clonfield, Oxon, send a copy of their catalogue, a descriptive list of fruit trees and Roses. The list of apples is a select and good one, and the prices are very reasonable. Muller's Red East Apple is described as a kitchen variety with large fruit, keeping over a year, a strong grower and a good cropper. Pears, plums, and the smaller fruits are listed, and then follows a list of Roses with hints on their culture.

MESSRS. DICKSONS, The Royal Seed Warehouses, Chester, send their Catalogue of Garden Seeds for 1913. The Catalogue is well printed and illustrated, and hints are given as to the best methods of growing the various crops. A goodly selection of flowers, vegetables and all the various garden sundries are quoted.

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Royal Horticultural Society.

THE annual general meeting was held in the offices, 5 Molesworth Street, Dublin, on the 12th ult., Lord Frederick FitzGerald, in the unavoidable absence of the President, Lord Ardilaun, presiding, a good attendance of members being present. The 83rd annual report, with statement of accounts to December 1st, 1912, being submitted by Sir Frederick Moore, hon. secretary, showing a credit balance of £60 16s. 6d. on the year's working, the balance of assets (including investments) over liabilities being £316 12s. 7d., was unanimously adopted. The chairman congratulated the society on the steady progress apparent, and Sir Frederick Moore spoke of the indebtedness of the society both to the president for his kindly interest in the society and aid by contributions to the prize fund, and to Lord Iveagh for the privilege which had been afforded of holding the outdoor exhibitions in the attractive and spacious grounds attached to his Lordship's Dublin residence, St. Stephen's Green. Sir Frederick Moore further gave an outline of the proposed 1913 programmes, consisting of the usual two days Spring Show held by arrangement with the Royal Dublin Society in conjunction with the latter Society's Spring Cattle and Implement Show at Ballsbridge; an Autumn Show to be held in August during the Dublin Horse Show week, and a Winter Fruit and Flower Show on two days in October, the schedule for which is in course of arrangement. Other acknowledgments being made to various members of the Society for their appreciated practical support, the meeting terminated on the re-election of the eight retiring members of the council, who were returned unopposed, with a vote of thanks to Lord Frederick FitzGerald for his courtesy in presiding.—*PER E. KNOWLDS, Secretary.*

Dublin Wholesale Markets.

THE markets for the past month were well supplied with fruit, flowers and vegetables. Home-grown apples in barrels were conspicuous, but owing to the prevalence of apple scab this season the full value of the fruit cannot be obtained. Large consignments from cross-channel sources are now arriving. Pears too were abundant, but they did not find a ready sale at the price asked for them. There was an average supply of grapes, and prices showed somewhat over previous month. The supply of flowers was large, and excellent prices were obtained for selected lots in bunches of from six to a dozen blooms. Some of those selected included Chrysanthemums, *Lilium longiflorum*, Lily of the Valley, Roses, Carnations, and Violets.

Vegetables were plentiful, and prices show a slight falling off from the previous month. Cabbages were extremely plentiful, but owing to the poor quality growers had to be satisfied with very low prices. There was a limited supply—disposed of at a premium—of sea-kale, French beans and celeriac from the Channel Islands.

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		s. d.	s. d.
Bramley's Seedling	per barrel	9 6	10 6
Lane's Prince Albert	per bushel	6 0	7 6

Apples—

Cox's Orange		From	To
		s. d.	s. d.
Pippin	per dozen	1 0	1 1
Mixed lots	per float	0 10	1 6
Pears—Doyenne du Comice	per dozen	1 8	2 6
Grapes	per lb.	1 1	1 6

FLOWERS.

Chrysanthemums	per doz. blooms	0 10	1 2
Carnations	.. ..	1 7	1 10
<i>Lilium longiflorum</i>	.. ..	2 6	3 0
Lily of the Valley	per bunch	0 10	1 0
Roses	.. ..	0 10	1 1
Violets	per doz. bunches	1 9	2 0

VEGETABLES.

Beet	per float	0 6	0 8
Brussels Sprouts	.. ..	1 0	1 6
Cabbage (York)	per load	6 6	8 0
.. (Savoy)	.. ..	3 0	1 6
Cauliflowers	per basket	2 6	3 0
Celery	per dozen	1 8	2 0
Leeks	.. ..	0 3	0 4
Mint	per bunch	0 2	0 3
Onions	per float	0 8	0 10
Parsley	0 7	0 9
Swedes	per cwt.	0 8	0 11
Thyme	per bunch	0 1	..
Turnips (White)	0 3	0 4

T. B.

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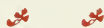
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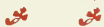
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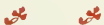
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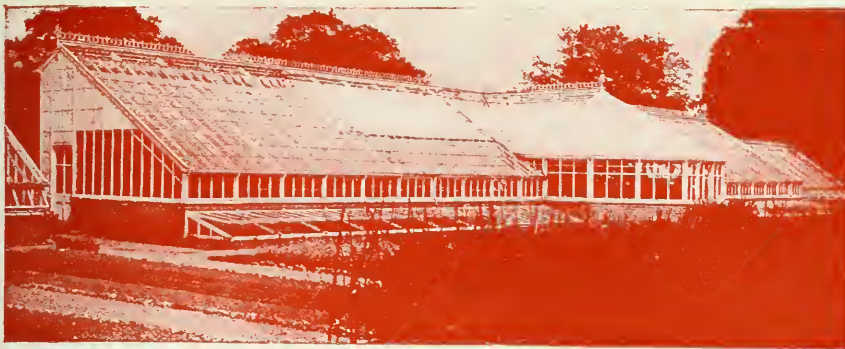
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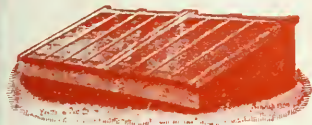
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The above grand collection of 18 varieties, post free for 5/-, together with a packet each of **Waved Prince Olaf**, 15 seeds 4d., and **Senator Spencer**, 25 seeds 3d.

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The 12 varieties 3/-, with **Orange King**, 12 seeds 3d., and **Betty Cantley**, 15 seeds 3d., added gratis.

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Aurora Spencer, white, flaked salmon (15). 3d. ; **Apple Blossom Spencer**, rose, blush wings (20). 3d. ; **Asta Ohn**, fine waved lavender (15). 3d. ; **Doris Burt**, bright cerise red (10). 3d. ; **King Edward Spencer**, bright crimson (15). 3d. ; **Mrs. A. Ireland**, bicolor, rose, blush wings (15). 3d. ; **Marie Corelli**, rosy cerise (20). 3d. ; **Mrs. Hugh Dickson**, pale cream pink (15). 3d. ; **Nora Unwin**, pure white (25). 3d. ; **Phæbus**, orange pink, fine grower (15). 3d. ; **Tennant Spencer**, deep mauve (20). 3d. ; **Zarina**, very pale coral pink, quite distinct (20). 3d.

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Royal Horticultural Society.

THE monthly meeting of the council was held at the society's offices, 5 Molesworth Street, Dublin, on the 10th ult., a good attendance of members being present at the first meeting of the year. Alderman Bewley and Ed. D'Olier, Esq., were re-elected chairman and vice-chairman, respectively, for the ensuing year. Finance, schedule and advertising committees were also appointed. A draft schedule of the winter fruit and flower show, to be held at Ballsbridge, October 22nd and 23rd, as prepared by the schedule committee, was submitted by Sir Frederick Moore, hon. secretary, who intimated the probable co-operation of the Department of Agriculture in various important and considerably augmented classes framed in the interests of the Irish fruit growing industry. An excellent sample of *Mère de Menage* apples sent by Mr. G. Bower, gardener to Lady Musgrave, Tourin, Cappoquin, Co. Waterford, was awarded a cultural certificate. Four new practical members were elected—viz., Mr. W. J. McCabe, Marino Gardens, Killiney; Mr. A. J. Doyle, Castleforbes Gardens, Newtownforbes; Mr. A. Morton, Woodbrook Gardens, Bray; and Mr. W. Williams, St. Michael's Gardens, Merion—the Co. Clare Horticultural Society and the Terenure District Society being affiliated. The next meeting of the council will be on the 14th inst., at which new members whose names have been since received will be proposed for election, and for which meeting the secretary will be glad to receive further nominations.

Catalogues.

MESSRS. EDMONDSON BROS., 10 Dame Street, Dublin, send their Seed Catalogue for 1913. It is issued in the form usually adopted by this well-known firm, a handy size and easy of reference. Vegetables take the premier place; good and select lists are given of peas, beans, seed potatoes, and in fact all the vegetables grown in the garden. On pages 28 and 29 cultural directions will be found. Then follow good descriptive lists of all the popular annuals for the greenhouse and the garden, and the Eblana Collections of Sweet Peas. Towards the end will be found the tools and all sundries useful in a garden, and also bee-keeping appliances, to which the firm pays special attention. The illustrations throughout are excellent, and many of them are copyright.

"DRUMMOND'S GARDEN SEEDS FOR 1913" is a very tastefully got up handsome catalogue issued by this well known Dublin firm. It is conveniently arranged in alphabetical order, and embellished with excellent illustrations of vegetables and flowers. In the Novelty List we note some new Sweet Peas, Petunias, Tomatoes, &c.

SATURDAY IN MY GARDEN

This is a book of 484 pages, size 8½ × 6 in., containing hundreds of practical and simple diagrams illustrating every gardening operation of the year. "The Amateur," says *The Graphic*, "could not find a more helpful book," and *The Daily Chronicle* says, "No better guide to the cultivation of a garden plot could be desired." By F. H. Farthing. Price 3 6 net. Grant Richards Ltd., London.

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which describes about 3,000 distinct species and varieties of Flower Seeds (including an up-to-date Collection of Sweet Peas), also a fine assortment of the choicest Vegetable Seeds. Their Catalogue, not being illustrated, does not attract the superficial lover of flowers, but it is much appreciated by the scientific and more advanced class of amateurs, and, moreover, the ridiculously high prices of some firms are avoided, and everything is offered at the lowest possible figure consistent with highest quality. *Post Free on Application*

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No. 5	size Bot.—1 oz., "sample"	" " 2,000	... 0	10

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In Decorated Tins.

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A Concentrated Extract of Quassia, combined with other valuable ingredients, forming a cheap, safe, and effective Insecticide for syringing and dipping. It destroys all Insect Pests infesting Trees and Plants, whilst no possible injury to vegetation can result from its use.

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PRICES Half-pint, 1/-; pint, 1/6; quart, 2/6; half-gallon, 4/- gallon, 7/6; five gallons, 25/-; ten gallons, 40/-
1 gallon sufficient for 80 gallons of water.

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Exceeds all others in General Fertilising Properties and Staying Powers.

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Sold in Tins, 1/-, 2/6, 5/6 each; and in Kegs, well secured, to prevent loss through exposure, 28 lbs., 7/6; 56 lbs., 12/6; 112 lbs., 20/-

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Sold in Tins, 1/-, 2/6, 5/6, and Bags, $\frac{1}{2}$ cwt., 10/6; $\frac{1}{2}$ cwt., 18/-; 1 cwt., 32/-

For Fumigating in Greenhouses.

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Improved Metal Cones

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To destroy Insect Pests. The Candle attached to each Cone only needs lighting, and there is no further trouble. They are most efficacious.

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This preparation is for destroying Daisies and other weeds on lawns, and at the same time stimulating the growth of the grass. If one tin is tried as a sample, its value will be at once appreciated. Sales are largely increasing.

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BENTLEY'S CONCENTRATED ALKALI

Q. A quick-acting non-poisonous Winter Wash for fruit trees and forest trees of every kind

1 to 5 tins, $\frac{1}{3}$ each; 8 tins, $\frac{1}{2}$ each; 12 tins, 1/- each; 20 tins, 1/- each; 40 tins, 1/- each
Carriage paid on 5/- orders and upwards

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CHEMICAL WORKS, BARROW-ON-HUMBER, HULL

Cultural directions are given to the vegetables and the flowers, the lists of seeds are select and good, while some illustrations show how beautiful a garden may be when judiciously planted with annuals and perennials. It is a list well worthy of inspection.

FORMERLY it was thought that Scotch seed potatoes gave the best results, but tests carried out at Wisley and elsewhere have proved this to be an illusion, and it is now a recognised fact that Irish seed gives the heaviest crops. Mr. J. F. Williamson, of Mallow, has been largely instrumental in securing the recognition of the great value of Irish seed potatoes, and deserves due praise. "The Colleen" is a first rate second early which was raised at Summer Hill. We can confidently recommend our readers to write to Mr. Williamson for his list, and then to study the cross-channel experiments.

MESSRS. LITTLE & BALLANTYNE send a copy of "Garden Seeds for 1913." In the novelty section appears an illustration from a photo of a house of their Tomato "Profusion." From the illustration it appears to be a wonderful free cropper with handsome fruits. There are also new peas, cucumbers, and melons. The vegetable lists are very complete, with good descriptions and cultural hints. In the flower seed novelty list, Veitch's New Calceolarias and a pure white form of Miss Jekyll's "Love in the Mist" may be noted among other good things. The general flower seed list is well illustrated, and can be consulted with safety by those who want a beautiful garden.

MESSRS. BLACKMORE & LANGDON'S Begonias are

known by everyone who takes an interest in greenhouse or bedding plants. Last year was a continuous succession of triumphs, beginning with the Royal International Exhibition, more medals and cups were added to a list already large. Their present catalogue contains some good illustrations of beautiful new varieties, while all the good doubles, crested and single frilled varieties, find a place. The distinct Begonia Martiana grandiflora, aptly described as like a Balsam, is a variety too seldom seen. Good cultural directions are given, and the adaptability of some kinds for baskets is well shown. Carnations and Delphiniums are also quoted.

THE Kelso firm of Stuart & Mein send their Gardening Guide for 1913. This firm has long been noted for its vegetable seeds. Every gardener knows Mein's No. 1 Cabbage. It has been selected and grown at Kelso for upwards of 50 years, and still holds a leading place as a large early cabbage. The leek is a favourite vegetable of the Scotch, and £5 is offered to customers in prizes for the three best of Mein's Selected Lyon Leek grown from their seed or plants. The lists of vegetables are very good, and excellent directions are given as to their cultivation, both for home use and for exhibition. A goodly selection of the popular annuals is followed by lists of Gladioli, Roses and Fruit Trees, &c.

THE Chase Continuous Cloche was invented by an Australian engineer, and is a means of using glass in a very economical form. It can be used for protecting plants, bringing on seedlings or raising cuttings, and makes the most of our sunshine, and protects from the ravages of birds.

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THE BEST TOMATOES, 3d. per packet of 200 Seeds
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ALL OTHER SEEDS EQUALLY CHEAP AND GOOD

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AWARDED 31 GOLD MEDALS

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Begonia Seed should be sown in the early months of the year to enable the seedlings to give a glorious display of flowers in out-door beds during the late summer and autumn, and that the best may be selected for pot culture next season.

Extracts from recent unsolicited Testimonials

"Seeds last year were superb."

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"My show of Begonias, all raised from your seed, are every year the admiration and envy of all who see them."

Double Seed, 2s. 6d. and 5s. per packet.
Single Seed, Plain, Frilled, or crested, 1s., 2s. 6d. and 5s. per packet.

Dormant Tubers should be bought during February, March or April.

Our Illustrated Catalogue of Begonias, Carnations, Cannas, Cyclamens, Blue Primroses, Delphiniums, Lily of the Valley, Polyanthus, and Violets sent post free on application to—

BLACKMORE & LANGDON
Twerton Hill Nursery—BATH

THE "ABOL" SYRINGE

Without doubt the most Economical and Efficient Hand Sprayer on the market—makes the wash go much farther than any other syringe does—"EVERYBODY SAYS SO."

THE NATIONAL ROSE SOCIETY SPECIALLY RECOMMENDS IT

In Reliability—Durability and Easy-working,
THE "ABOL" SYRINGE IS WITHOUT EQUAL

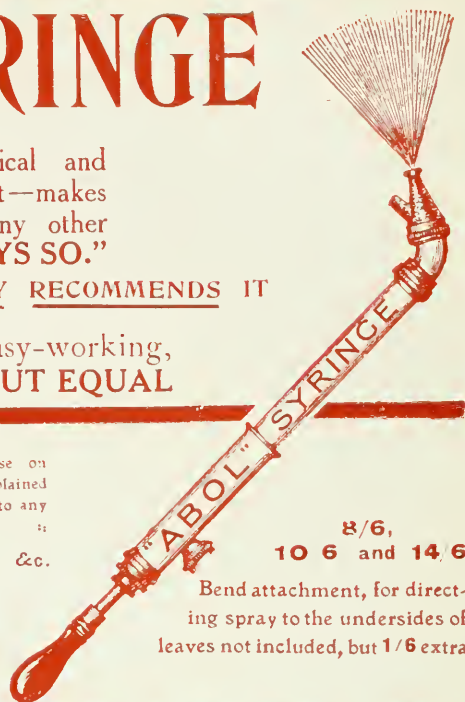
GARDEN PESTS.

An interesting and helpful treatise on Garden Pests and Mildew, clearly explained and illustrated, will be gladly sent to any address, Gratis and Post Free " " "

OF ALL NURSERYMEN, SEEDSMEN, IRONMONGERS, &c.

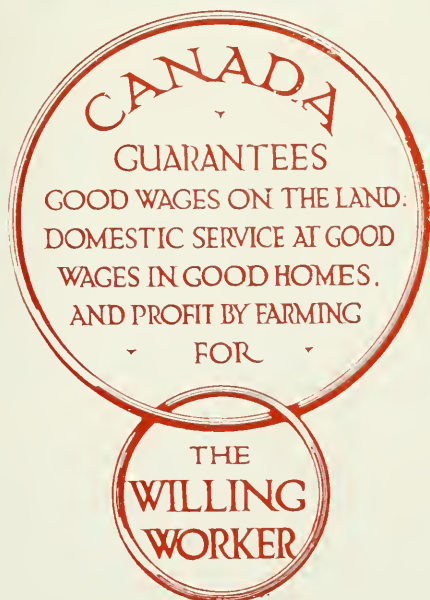
or direct from the Sole Proprietors and Manufacturers
of the "ABOL" NON-POISONOUS INSECTICIDE ::
and PATENT SYRINGES :: :: :: ::

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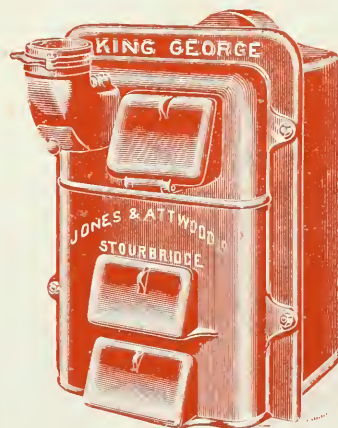
8/6,
10 6 and 14 6

Bend attachment, for direct-
ing spray to the undersides of
leaves not included, but 1/6 extra



For free maps, pamphlets and full particulars apply to Mr. JOHN WEBSTER, Canadian Government Emigration Agent, 17-19, Victoria Street, Belfast; Mr. EDWARD O'KELLY, Canadian Government Emigration Agent, 44, Dawson Street, Dublin; or to Mr. J. OBED SMITH, Assistant Superintendent of Emigration, 11 & 12, Charing Cross, London, S.W.

"King George" Greenhouse Boiler



The cheapest little boiler on the market ::
for greenhouse work: Low in price, ::
economical in working, and absolutely efficient
Send for list of Heating Apparatus, Series I.C.

Jones & Attwood, Ltd.
STOURBRIDGE

cats and mice. The framework is of wire. The small space into which the glass can be packed when not in use should be an advantage to many people. The notice of the Chase Continuous Cloche appeared in our January number, page vi. The Three C's, 67 Dale Street, Liverpool, issue a booklet giving particulars of tent, and barn-shaped cloches, and alpine plant protectors.

THE PLANTERS' GUIDE comes from Messrs. Wm. Power & Co., of Waterford. Very useful advice is given as to the best kinds of trees to plant on the various kinds of soil—as stony, sandy, peaty soils, &c.—with a planter's table, and notes on forest trees. Forest trees and hedge plants are largely grown by this well known firm. The catalogue also deals with Conifers, evergreen and deciduous shrubs. Fruit trees find a place in the catalogue, as also do Roses, while a list of sundries is given at the end. Some of the illustrations in the list show wide stretches of young forest trees in the nurseries, and others show plantations made by the firm to the satisfaction of their clients.

"POWERFUL SEEDS FOR 1913." Messrs. Power's Seed List is a handsome one, well got up, with very clear and numerous illustrations. All the best vegetables are described and their culture given in concise but efficient terms, and some good novelties may be found. Some notes on lawns are followed by the flower seeds, a good number of the flowers being beautifully illustrated. To those who want either a pretty or a useful garden we can recommend the catalogue of this old-established firm.

A CATALOGUE comes from The Wargrave Plant Farm, Ltd., The Arcade, Liverpool Street, London. The Rock Garden at Friar Park, Henley, is known as the finest of its kind in existence. Sir Frank Crisp, Bart., is the owner and also the designer of Friar Park, and his son, Mr. Bernard Crisp is the promoter of this company. An illustration of part of the rockery appears on the cover of the catalogue. The nurseries are at Twyford in Berkshire; here, in the pure country air, good stocks of herbaceous plants have been worked up. Alpines are a feature, and here one may see rare Primulas, Anemones, Soldanellas, Pratias, Wahlenbergias, silvery Achilleas, and Artemisias, &c.; also rare shrubs. The present catalogue deals with seeds. A red Brachycome, and other interesting novelties appear on the inside cover. A large collection of seeds of alpine and herbaceous plants, as well as annuals and biennials, are offered. The arrangement is alphabetical, and one sees at a glance the colour, time of flowering, when and where to sow, and the height. The best Sweet Peas are also quoted, and a good list of vegetable seeds. Sundries and Gardening Books are to be found at the end of the catalogue.

The practice which has become so popular of sowing Sweet Peas singly in pots and bringing them on under glass, whether in frame or greenhouse, has called for new methods more convenient than the old earthen thumb pots, which are not deep enough and take up considerable space. The need seems to be exactly met by the "T.P." Seed Raiser, which is made of cardboard $1\frac{1}{2}$ inches

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INDISPENSABLE IN THE GARDEN



1868

1912

SAFE, SURE AND LASTING

The result of of many years' practical experience

Vino, Plant and Vegetable Manure. 1 cwt. 20/-; $\frac{1}{2}$ cwt. 10/-; $\frac{1}{4}$ cwt. 6/-; 14 lbs., 3/6; 7 lbs., 2/6; Tins, 2/6 1/- and 6d.
Carriage paid on 1 cwt. anywhere

Special Top-dressing Manure.— $\frac{1}{2}$ cwt., 20/-; $\frac{1}{4}$ cwt., 11/-; 14 lbs. 6/-; 7 lbs., 3/6; Tins, 1/- Carriage paid on $\frac{1}{2}$ cwt. anywhere

Also Thomson's Book on the Vine. Thomson's Syptic

SOLD BY NURSERYMEN & SEEDSMEN EVERYWHERE

Write for Pamphlets, Price Lists, &c., to Sole Makers

WRITE AT ONCE
FOR A COPY OF

Sutton's Seeds
have now been
awarded more
than 550 Gold
Medals and
other honours

SUTTON'S GARDEN SEED CATALOGUE

FOR 1913

containing full particulars
of all the finest FLOWER
and VEGETABLE SEEDS
and much valuable infor-
mation.

including the
highest awards
at the Royal
International
Horticultural
Exhibition,
1912, for
plants raised
from seed.

SUTTON & SONS,

The King's Seedsmen,

READING

SIR JAMES W. MACKEY, LTD.

SEEDSMEN AND NURSERYMEN

FOUNDED 1777.

23 UPPER SACKVILLE STREET,
DUBLIN, 1st February, 1913.

Having in mind that the purity of our stocks of Sweet Peas is the highest obtaining, and the general shortage in the yield of seed last year, the following collections of choice varieties at the prices offered are, we believe, exceptional value. An early placing of your order is recommended, as it is possible that some of the varieties may be soon sold out.

Mackey's

BIJOU COLLECTION SWEET PEAS.

Consisting of the following twelve finest named Spencer varieties, in three sizes, viz.:--

10 seeds of each, 1/6; 25 seeds of each, 2/9;

50 seeds of each, 5/-, post free.

ETTA DYKE, pure white

CLARA CURTIS, primrose

GEORGE STARK, scarlet

COUNTESS SPENCER, pale
pink

MRS. HARDCASTLE SYKES,
blush

JOHN INGHAM, carmine-rose

SUNPROOF KING, crimson

MASTERPIECE, lavender

QUEEN OF NORWAY, mauve

HELEN GROSVENOR, orange

ELSIE HERBERT, white, edged
pink

FLORA NORTON SPENCER, light
blue

Mackey's

POPULAR COLLECTION SWEET PEAS.

Consisting of the following twelve beautiful named varieties (30 seeds each), 1/9, post free:--

DOROTHY ECKFORD, white

PRINCESS VICTORIA, pink

CONSTANCE OLIVER, cream

KING EDWARD SPENCER,
crimson-scarlet

HELEN LEWIS, orange-pink

MARJORIE WILLIS, rose

ASTA OHN, rosy lavender

TENNANT SPENCER, mauve

QUEEN ALEXANDRA, scarlet

LORD NELSON, deep blue

GLADYS UNWIN, pink

EVELYN HEMUS, cream, edged
pink

Mackey's Ltd.

square by $4\frac{1}{2}$ inches deep, and collapsible, so that when it is not in use it can be folded flat and stored away in very little space. When in use 48 of these seed raisers fit into a box of about 13 inches by 10 inches, which is supplied with each 48, the entire cost being only two shillings. One can thus have 48 plants in a very small space indeed, each one separate, the rootlets not intertwining, and ready to plant out when the time arrives, the seed raisers being packed close together conserve the moisture, and can be more easily protected from frost. They can also be preserved from slugs, woodlice, &c., and are so portable that they can be moved about without trouble. We are informed that such celebrated growers and prize-winners as Mr. Cowdy, of Loughgall, and Mr. Thomas Jones, of Ruabon, use these seed raisers, and this is surely a guarantee for their usefulness and convenience.

MR. G. H. MACKERETH, ULVERSTON, sends us his seed catalogue. All Sweet Pea enthusiasts know that Mr. Mackereth specializes in Sweet Peas, and his list of the newest varieties is unique—there is no better judge of a good thing, and he secures from the introducers the best that are to be had. His list should be in the hands of everyone that intends to exhibit. It contains most minute instructions for the "*Intense Culture and Exhibiting of Sweet Peas*," and his "*Special Sweet Pea Manure*" is used by almost every exhibitor.

Correspondence.

DEAR SIR,—I wonder if you know of any one in Ireland who would be willing to keep a rough record of the different insects and the proportion

of each that visit the various hardy fruit flowers? I think it would be of interest, and even of practical importance. I am a great believer in keeping bees on a fruit farm. Some growers and others I meet think it a fad, and think wild bees and other insects are sufficient. I believe in many cases there would be more regular fruit crops if bees were kept.

CECIL H. HOOPER,

South-Eastern Agricultural College,
Wye, Kent.

POPULAR SEED PACKETS.

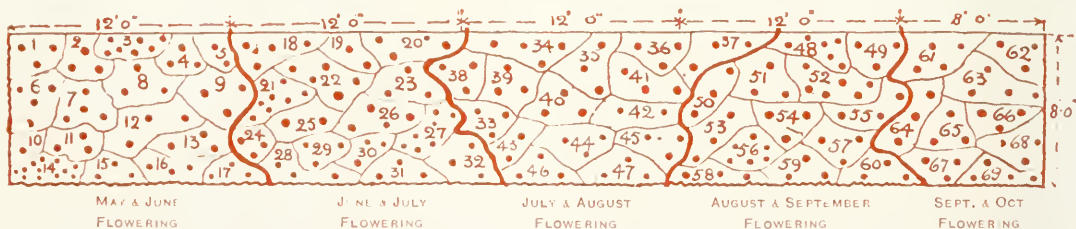
DEAR SIR—In Miss Pollock's contribution to your last issue there occurs a statement with reference to Irish seed-houses which is somewhat misleading, if not in part inaccurate. We refer to a paragraph where it is stated that "there is in Ireland no seed merchant who quotes in his seed catalogue 1d. packets of seeds." "Some of them," the writer further remarks, "will supply small packets if asked to, but they do not quote for them in their general seed catalogue."

Now, we annually distribute a very large number of 1d. packets of flower and vegetable seeds. We also issue a special list of such packets, our "P.S.P." (popular seed packet) list. We know from experience, if it were not otherwise quite obvious, that the owners of the gardens your contributor had in mind have no use whatever for much the greater portion of the things that go to make our general list, and for us to utilize this list (80 pp. 4to) for the purpose suggested would be about as nice a piece of economy as it would be to employ traction engines in our local parcel distribution.

SIR JAMES W. MACKEY, LTD.

PLANT NOW . A BEAUTIFUL GIBSON BORDER

FOR SUCCESSIONAL MASSES OF BLOOM.



This border is 56 ft. long, 8 ft. wide, and contains a total number of 240 plants, named, numbered, and delivered carriage paid for **£5 10s.** Full particulars and Catalogues of Hardy Plants, Fruit Trees and Yorkshire grown Roses sent free. Larger or smaller borders arranged and supplied at proportionate cost.

GIBSON & CO. (DEPT. A) LEEMING BAR, BEDALE

WINTER SPRAYING OF FRUIT TREES to remove Lichen, &c.

LIME-SULPHUR WASH
CAUSTIC SODA, 98 per cent.
PEARL ASH, 75/80
PURE SOFT SOAP

COPPER SULPHATE, 98
COOPER'S V I WINTER
SPRAY FLUID . . .
&c., &c.

SPRAYING AND FUMIGATING MATERIALS OF ALL KINDS AT LOWEST CASH PRICE.

D. M. WATSON, HORTICULTURAL CHEMIST, **61 South Great George's Street, DUBLIN**

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Edmondson's Eblana Collections

25 Varieties, 25 seeds each ————— for 1s. 6d.

25 Varieties, 50 seeds each ————— for 2s. 6d.

The "Minor Eblana" Collection, 12 choice sorts, 1s.

The "Novelties" Collection ————— 12 novelties, 5s.

Eblana Mixture, 1 qt. 5s., 1 pt. 2/6, $\frac{1}{2}$ -pt. 1/6, 1 oz. 3d.

Giant-flowered Mixture, 1 lb. 5s., $\frac{1}{2}$ -lb. 2/6, 1 oz. 6d.

Spencer Mixture, 1 lb. 12/6, $\frac{1}{2}$ -lb. 6/6, $\frac{1}{4}$ -lb. 3/6, 1 oz. 1s.

EDMONDSON BROTHERS

SEEDSMEN

10 DAME STREET ————— DUBLIN

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MODERN GLASSHOUSES Replete with the latest improvements. Artistic Designs, and best workmanship and materials, combined with utility and economy. Estimates and Plans given for Winter Gardens, Conservatories, and Glass-houses of every description * *

All varieties of Garden Frames in * * stock * *



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REMEMBER!

DAMP GROUND is dangerous, so whatever you forget, don't forget

The celebrated "G" Brand
GARDEN CLOGS

Cosily White Felt Lined
Men's or Women's

ONLY **4/6** POST PAID

Children's sizes,

7, 8, 9, 10, 11, 12.
13, 1, 2, 3, 6.

Our Clogs are well worth buying.

Every purchaser more than delighted

Shops supplied by
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THE WELLINGTON MANUFACTURING COMPANY

(Dept. 27) 4 WELLINGTON STREET ————— GLASGOW

WEEDS DISFIGURE YOUR WALKS & LAWNS

"CLIMAX" LAWN SAND

will kill weeds and fertilises the grass.
Sample Tin 1 -, post free. 28 lbs. to dress 100 sq. yards, 6 -, carriage paid.

"CLIMAX" WEED-KILLER

kills weeds on walks and keeps them bright and clean
No. 1. tin (to make 12 galls. for use). **1/3**
No. 2. tin (making 25 galls.). **2/-**
No. 3. tin (making 50 galls.). **3/6**
No. 4. tin (making 100 galls.). **6/-**

Carriage paid.

BOUNDARY CHEMICAL CO., LTD.
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Show Fixtures for 1913

Co. Louth Spring Show, March 6th.
 Co. Clare Horticultural Society, Spring Show
 at Ennis, April 16th.
 Royal Horticultural Society of Ireland, Spring
 Show, April 16th and 17th.
 Belfast Show, May 28th and 30th.
 Kilkenny Summer Show, June 19th.
 Mallow Show, June 25th and 26th.
 Newry Show, June 30th.
 Cork Summer Show July 8th and 9th
 Co. Clare Horticultural Society, Summer Show
 at Ennis, July 30th.
 Nayan Show, August 5th.
 Co. Galway Horticultural Society, Show at
 Ballinasloe, August 13th.
 Royal Horticultural Society of Ireland, Autumn
 Show, August 26th.
 Co. Kilkenny Horticultural Show, September 14th.
 Royal Horticultural Society of Ireland, Winter
 Show, October 22nd and 23rd.

Dublin Wholesale Markets.

DURING the past month the markets underwent a slight transformation. Large quantities of holly, ivy, and mistletoe foretold of Christmas decorations. Cut flowers and pot plants lent a pleasing feature—especially welcome at such a dull season of the year. Chrysanthemums were by far the most popular; and good prices were obtained for those white varieties which were of first quality.

Canadian and American apples were well in evidence; but the demand for them was low owing to the prohibitive price asked. Pears, too, were abundant, and, together with grapes, oranges and pineapples, made a fine display for Christmas. Irish apples are now becoming scarce, with the result that buyers will have to turn their attention again to foreign fruit.

The vegetable section was well supplied with seasonable produce; and, with few exceptions, the supplies did not exceed the demand. Broccoli was not so plentiful as might be expected at this period of the year. Swedes have been a leading vegetable during the month, but the prices obtained were far beyond their value. Artichokes, Brussels sprouts, and pot herbs were eagerly sought after at the auctions.

Apples—PRICE LIST—FRUIT.			
		From	To
		s. d.	s. d.
Bramley's			
Seedling	per barrel	9 6	11 6
Gascoigne's			
Scarlet	„	10 6	12 0
Newton Wonder			
der	per bushel	9 0	—
Mixed lots	per float	0 10	1 6
Pears (selected)	per dozen	2 6	3 0
Grapes	per lb.	1 1	1 6

FLOWERS.			
Chrysanthemums	per doz. blooms	0 10	1 0
Carnations	„	3 6	1 0
Lilium longi-			
florum	„	2 3	2 9
Lily of the Valley	per bunch	0 9	1 0
Violets	per doz. bunches	1 6	2 0

VEGETABLES.			
Artichokes	per float	1 9	2 3
Broccoli	per flasket	2 0	3 0
Brussels Sprouts	per float	1 6	2 0
Cabbage (York)	per load	6 6	10 6
„ (Savoy)	„	5 6	8 0
Celery	per dozen	1 3	1 9
Leeks	„	0 3	0 4

Vegetables—continued			
		s. d.	s. d.
Mint	per bunch	0 2	0 3
Onions	per float	0 6	0 9
Parsnips	per dozen	0 6	0 8
Parsley	per tray	0 4	0 6
Swedes	per cwt.	0 10	1 0
Scallions	per bunch	0 4	—
Turnips (White)	„	0 3	0 4
Thyme	per doz. bunches	0 8	1 0

NOTICE

SECRETARIES of Irish Horticultural Societies will greatly oblige by sending to the the Editor of IRISH GARDENING early notice of dates and other particulars of their Shows for 1913, or of any Shows which include Horticultural Classes. :: :: ::

Office of IRISH GARDENING
 53 Upper Sackville St.
 —DUBLIN—

MACKERETHS SPECIAL SWEET PEA MANURE

The thought-out ideal Sweet Pea Food

MR. E. COWDY and MR. A. E. USHER
 both use it!

THIS IS TESTIMONY ENOUGH!

It imparts sturdiness and vigour to the haulm and foliage. Increased size and higher colour to the blooms. Greater length and stoutness to flower stems. :: :: ::

May be had from Messrs. S. McGredy, & Son, Portadown; Mr. Jas. Walsh, Portadown; or Messrs. Ritchie & Co., Belfast, in tins 1/- each (post free, 1/4); 2/6 each (post free, 3/-); in bags, 11 lbs., 5/-; 28 lbs., 8 6; 56 lbs., 14/-; 112 lbs., 25/-. Carriage Paid. :: ::

or direct from . .

G. H. MACKERETH
 The Sweet Pea Clearing House
ULVERSTON

The most unique Sweet Pea list with intense cultural directions will be posted on receipt of post card

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NOW'S the time to use XL ALL WORM and GRUB KILLER. The deadly vapour given off from this powder after being dug or ploughed in immediately permeates the soil and kills wireworms, grubs, and all other insects which prey upon the roots and destroy crops. XL ALL Winter Wash for Fruit Trees and Bushes. One syringing or spraying with this will cleanse the trees from moss and kill all insects which cling to and hibernate under the bark, such as American blight, scale, &c. &c. From all Agricultural Dealers or Nurserymen and Seedsmen.—Manufacturer, G. H. RICHARDS, 231 Borough High St., London, S.E.

LANDSCAPE GARDENING

DESIGNING, Laying out and Planting of New and Renovating of Old Gardens. The Making and Planting of Rock Gardens, Rockeries, Water and Bog Gardens, and Pergolas a Speciality.

Plans Prepared.

Estimates Free.

RICHARD C. McM. SMYTH, F.R.H.S.
Mount Henry Dalkey, Co. Dublin

WINDOW GLASS

Polished Plate for Shop Windows.

Horticultural Glass at Lowest Rates

DEATH TO THE WEEDS!

HOYTE'S WEED KILLER.

Strongly Recommended for the Destruction of Weeds, &c.

Price, 2s. per gallon; 5 gallons, 1s. 6d. per gallon; 10 gallons, 1s. 3d. per gallon; Original 40-gallon casks, 1s. per gallon.

HOYTE & SON, The City of Dublin Drug Hall,
17 LOWER SACKVILLE STREET, DUBLIN
Please mention this Paper

IF YOU HAVE A GLASS ROOF THAT LEAKS, a Conservatory to repair, or any kind of glazing work to be done, CARSON'S PLASTINE will save money, time, worry and annoyance consequent on the use of ordinary putty, which cracks, crumbles, and decays. It saves the expense of constant renewals. Carson's Wood Preservative in green and brown, for Palings, Trellis Work, &c. The best paint for Greenhouses is "Vitrolite." Write for Catalogue. CARSON'S, 22 Bachelor's Walk, Dublin.

AUTO-SHREDS IS CERTAIN DEATH to Leaf-mining Maggots, Mealy Bug and all Pests infesting plants under glass, &c. Simple to use, no apparatus required. In Boxes to fumigate 1,000 cubic feet, 6d.; 10,000 cubic feet, 3s. 6d. each. Obtained of Seedsmen and Florists; if unobtainable apply direct—



WM. DARLINGTON & SONS,
Wholesale Horticultural Sundriesmen,
HACKNEY, LONDON, N.E.

Trade Terms and Catalogue of Sundries upon receipt of business card

National Sweet Pea Society

LONDON EXHIBITION

ROYAL HORTICULTURAL HALL

JULY 17, 1913

Provincial Show at Carlisle, August 13 and 14

Now is the best time to join the Society. Annual Subscription from 5s. Schedules now ready. SWEET PEA ANNUAL 2s. post free (free to Members).

CHARLES H. CURTIS, Hon. Sec., Adelaide Road
BRENTFORD MIDDLESEX,

Fethard Flower Show

WILL BE HELD AT

GROVE HOUSE, FETHARD

(One Mile from Station)

By kind permission of R. BURKE, Esq., M.F.H.
On THURSDAY, JULY 31st, 1913

Over 30 Classes open to all Ireland
FOR VEGETABLES, FRUIT AND FLOWERS

£10 Prize offered for Sweet Peas

12 SPRAYS OF 12 NAMED VARIETIES

£3 Prize offered for Carnations

Schedules from Hon. Secs.

Rev. R. C. PATTEN, Fethard Rectory, Co. Tipperary
J. C. O'BRIEN, Lakefield, Fethard, Co. Tipperary

GARDEN SEEDS AND REQUISITES. Sweet Peas a Speciality. Home-grown Seed of Choice varieties from noted raisers. **THE BEST VARIETIES. THE BEST STRAINS.** GOLD MEDALS, 1912. Perthshire Sweet Pea Society and Bronghty Ferry Sweet Pea Society. **D. McOMISH'S NEW SWEET PEA LIST**, gratis on application. Collections of 12 varieties, 16, 3- and 4 6. **D. McOMISH'S** Choice Strains of Antirrhinums, Nemesis, Ten-Week Stocks, &c. &c., are well known. **CULINARY PEAS.**—Select strains of Gradus, The Pilot, Laxtonian, Quite Content, Rearguard, &c. **D. McOMISH**, Bull and Seed Merchant, Crieff, PERTSHIRE. Estd. 1859. The House for Garden Seeds of Highest Quality and Purity. Complete Seed List on application.

1/- VEGETABLE SEEDS—Beet, Broccoli, Brussels, Cabbage, Carrot, Cauliflower, Celery, Lettuce, Onion, Parsnip, Radish, Turnip; Spinach, Savoy. Send Postal Order for 1s. and penny stamp for postage, to **Winder & Co.**, Seedsmen, Woodfield Road, Leigh-on-Sea, Essex, England. All flower seeds in penny packets.

PURE ICHTHEMIC GUANO.

The Richest Plant Food, and the Most Natural Fertiliser.

Supplied in Tins and Bags, 6d. to 2/6. Carriage paid on quantities of 25 lbs. and upwards.

FAME'S FERTILISER.

Supplied in Tins and Bags, 1/- to 2/6. Carriage paid on quantities of 25 lbs. and upwards.

Ask your Seedsman

Sole Proprietors and Manufacturers,

WM. COLCHESTER & CO.,
IPSWICH, England

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our exhibit at the Royal International Exhibition, 1902, was awarded the largest gold medal, and for the best track and water garden we were awarded **QUEEN ALEXANDRA'S CUP**

Booklet on Garden Design post free. Surveys, plans, designs, estimates. Work undertaken and cheaply carried out.

**LILIES, GLADIOLI and MONTBETIAS
HARDY HERBACEOUS PLANTS
ALPINES. ROCK-GARDEN SHRUBS**

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**CHRYSANTHEMUMS .
CARNATIONS AND .
HERBACEOUS PLANTS**

POST FREE ON APPLICATION

WELLS' BOOK

"The Culture of the Chrysanthemum"

16 POST FREE

W. WELLS, & CO., Merstham SURREY

SWEET PEAS

The Exhibitor's House for true stocks of English-grown Seed
AWARDED 100 GOLD MEDALS

NOVELTIES FOR 1913

**AGRICOLA, BIRDBROOK, BOLTON'S
SCARLET, MRS. E. COWDY, DECORATOR
CROMWELL, PLUTO, R. F. FELTON**

1s. per packet

For other Novelties and all the latest varieties in cultivation, see Catalogue, post free

ROBERT BOLTON, F.R.H.S.
Sweet Pea Specialist
WARTON — CARNFORTH

"ACME" WEED KILLER

For Destroying Weeds, Moss, &c., on Carriage Drives, Garden Walks, Roads, &c.

POWDER WEED KILLER.

Dissolves quickly in cold water

Size of	No. 1, To make 2 1/2 galls.	19	postage ad.
1 lbs.	No. 2, " " 50 "	33	" 1d
	No. 3, " " 100 "	6-	post paid

LIQUID WEED KILLERS.

Size 1 lb. in 25 and 1 in 50. Prices on application

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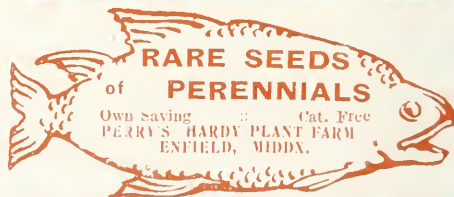
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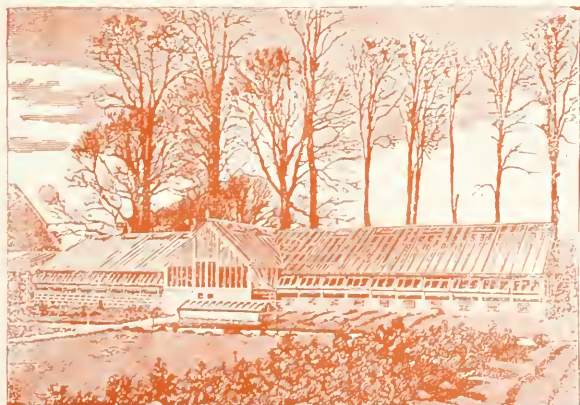
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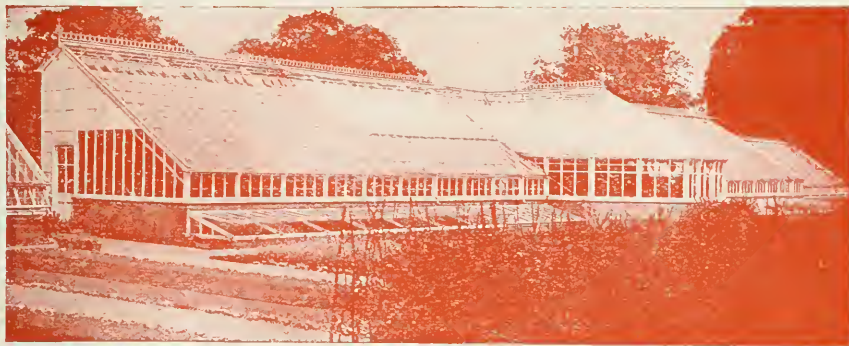
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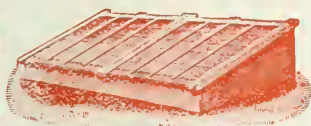
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Royal Horticultural Society.

THE monthly meeting of the council was held at the society's offices, 5 Molesworth Street, Dublin, on the 11th ult. Following routine business: Alderman Bewley (Chairman) moved that a journal of the society's proceedings, with items of interests, be published and furnished to members free, periodically, and the schedule committee was instructed to furnish details of same and report to next council meeting. Should the contemplated journal, it may be added, prove *un fail accompli* its objective will be that of bringing and keeping members more in touch with the society's work, and will probably include a record of the prize winners at the various shows, formerly published with the annual report, but for some years suspended. It will, in fact, be solely in the interests of that membership on which the society practically depends for its existence, and neither clash nor compete with any existing gardening literature. In response to a request of the Royal Horticultural Society of England that two gentlemen should be nominated as representatives on a parliamentary committee being formed by that body in the interests of horticulture, Jas. Robertson, Esq., J.P., and D. L. Ramsay, Esq., J.P., were unanimously chosen. Sir Frederick Moore, hon. secretary, reported that the Department of Agriculture for Ireland had notified the intention of presenting prizes for 65 classes, including packing classes, at the winter fruit show in the interests of the Irish fruit growing industry, also the result of his appeal to the vice-presidents and members of council of

the society, which, in aiding the substantially increased prize list, was considered very satisfactory. The same pleasing result was also noted in the practical members' prize classes. It was approved that the large gold medal of the society, value £5, be allocated to the trade class table of fruit. In the compiling of this particular schedule, with the endeavour to make it as comprehensive as possible, a little unavoidable delay in its issue has occurred, which, however, is not material with ample time ahead, advance copies of the schedule for the spring show, April 16 and 17, having been for some time in the hands of prospective exhibitors, and available to any one on application to the secretary. A cultural certificate was awarded to Mr. G. Bower, gardener to Lady Musgrave, Tourin, Cappoquin, for nice samples of Violets Marie Louise and Mrs. W. W. Astor sent to the meeting. It is gratifying to note that the meeting, as with the last, did not pass over without an addition to the membership list, Lady Moore, Mrs. Beaumont Nesbitt, and Mr. E. Dallman Page being proposed and duly elected. The next council meeting will be held on the 11th inst. at the usual hour, 3.15 p.m.

Catalogues.

MESSRS. R. WALLACE & CO., of Colchester, send a catalogue of bulbs and plants for spring planting. The winning of H. M. Queen Alexandra's Cup at the International Exhibition for the best Rock and Water Garden was a great honour for their Landscape Department, and

FOR THE FINEST QUALITY PERPETUAL

**Carnation
Plants**

Write to

GOLD

MEDALISTS

YOUNG & CO.

**HATHERLEY
CHELTENHAM**

CATALOGUE AND ALL PARTICULARS FREE

Read our Treatise on Culture, 1s. post free

Try Perpetuals in the open, the results will astonish you!

NEW, RARE AND CHOICE

HARDY FLOWERS FROM SEEDS

The Herbaceous border and Rockery are now the most attractive feature of the garden, and no garden is complete without a fair collection of hardy plants. The raising of these beautiful plants from seeds is at once most interesting and economical. Kern and up-to-date amateurs should get

**THOMPSON & MORGAN'S
58th ANNUAL SEED CATALOGUE**

which they will find of immense value and interest
CARR STREET IPSWICH

IRISH SEED POTATOES

Send for list of varieties offered by

CAPT. BARRETT-HAMILTON

The Largest Grower in the South of Ireland

OTHER SPECIALITIES—

CABBAGE PLANTS

DAFFODIL and NARCISSI BULBS

KILMANOCK, CAMPILE, VIA WATERFORD

**"THE DENNIS"
HEATING APPARATUS
COMPLETE**



CAST IRON SECTIONAL
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RADIATORS

VALVES

LISTS FREE

THOS. W. ROBINSON, LTD.

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(FUMIGANT)

		cubic ft.	e ch.-s.	d.
No. 1 size Tin—1 pt.	contins sufficient for	40,000	...	15 0
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No. 3 size Bot.—6 oz.	" "	12,000	...	4 6
No. 4 size Bot.—4 oz.	" "	8,000	...	3 0
No. 4½ size Bot.—2 oz., new size	" "	4,000	...	1 8
No. 5 size Bot.—1 oz., "sample"	" "	2,000	...	0 10

CARRIAGE PAID

Fumigating Lamps
1s. each, for 5,000 cubic feet

Nicoticide Plant Spray

½-pint 1/2 Pint 2/-
Quart 3/6 ½-gal. 5/-
Gallon 10/- Carriage Paid

GOW'S LAWN SAND
DAISY ERADICATOR

28 lbs. (to dress 100 square yds.) 6/6.
½-cwt. 11/-, 1 cwt. keg 21/-



CARRIAGE PAID

GOW'S LIQUID WEED KILLER

1 gallon, to make 51 gallons, in solution . . . 3 6
5 " " Drums Free " Carriage Paid . . . 16 -

Use Gow's Tobacco Powder and Quassia Extract

6d., 1/- and 2/6, decorated tins.

GOW'S SLUG DESTROYER And Combined
as tilliser

28 lbs. 4/6 ½-cwt. 7/6 1 cwt. 11/6
All Carriage Paid Sample Tins, 6d and 1/-
In Decorated Tins.

ASK YOUR SEEDSMEN AND NURSERYMEN FOR IT.

HUNTER & GOW, Ltd. 42 Thomas St. LIVERPOOL

THE CHEAPEST INSECTICIDE OF THE DAY

"NIQUAS"

(NON-POISONOUS)

IMPROVED

A Concentrated Extract of Quassia, combined with other valuable ingredients, forming a cheap, safe, and effective Insecticide for syringing and dipping. It destroys all Insect Pests infesting Trees and Plants, whilst no possible injury to vegetation can result from its use.

It can be applied with syringe or pump, or used for dipping.

PRICES—Half-pint, 1/-; pint, 1/6; quart, 2/6; half-gallon, 4/-
gallon, 7/6; five gallons, 25/-; ten gallons, 40/-

1 gallon sufficient for 80 gallons of water.

STANDEN'S MANURE

(Established over 35 Years)

Exceeds all others in General Fertilising Properties and Staying Powers.

Analysis on Application

Sold in Tins, 1/-, 2/6, 5/6 each; and in Kegs, well secured, to prevent loss through exposure, 28 lbs., 7/6; 56 lbs., 12/6; 112 lbs., 20/-

CORRY'S SPECIAL

Chrysanthemum Manure

Sold in Tins, 1/-, 2/6, 5/6, and Bags, ½ cwt., 10/6; ½ cwt., 18/-;
1 cwt., 32/-

For Fumigating in Greenhouses.

"LETHORION" Improved Metal Cones

Registered No. 62,697

To destroy Insect Pests. The Candle attached to each Cone only needs lighting, and there is no further trouble. They are most efficacious.

No. 1, for small frames of 100 to 600 cubic feet, 6d. each; Cone No. 2, 8d. each, 1,000 to 1,200 cubic feet; No. 3, 1/- each, 2,000 to 2,500 cubic feet.

Fowler's Lawn Sand

This preparation is for destroying Daisies and other weeds on lawns, and at the same time stimulating the growth of the grass. If one tin is tried as a sample, its value will be at once appreciated. Sales are largely increasing.

Tins, 1/-, 2/6, and 5/- each; Kegs, ½ cwt., 8/6; ½ cwt., 16/-;
1 cwt., 30/-

ELLIOTT'S

'Summer Cloud' Shading

Registered Trade Mark No. 14,629.

(The only genuine original and Improved article)

For Greenhouses. A pleasant green shade is given to the glass.

In packets, 1/- for 100 feet of glass, and 2/6 each for 300 feet.

Sole Manufacturers:

CORRY & CO., Ltd
LONDON

SOLD BY ALL NURSERYMEN AND SEEDSMEN

DEATH TO ALL INSECT PESTS

AT THIS TIME OF THE YEAR
Glasshouses are infested with
Green Fly, Black Fly, Spider and
other injurious pests, which sap
the vigour from the plants and
prevent them thriving.

Rid Your Plants of Pests

For this purpose nothing can
be better, more economical, or
safer than

McDOUGALL'S FUMERS

AND

TOBACCO SHEETS

NO SPIRIT REQUIRED. NO LIQUID POISON.

Efficiency and strength guaranteed by the oldest
established Manufacturers of Horticultural
Specialties.

SOLD BY NURSERYMEN, SEEDSMEN & FLORISTS
THROUGHOUT THE WORLD.

to their plantmen. Lilies have always been a feature with this firm, and their collection is a most complete one, including good novelties as *L. myriophyllum* and *L. Sargenti*. Gladioli and other bulbs and tubers for present planting may be found, including Davison's new *Montbretias*, in which a wonderful advance has been made. The list of hardy herbaceous plants and Alpines is just a selection of the best and most useful plants for the garden, and is followed by another choice selection of dwarf shrubs suitable for the rockery.

A 1913 CATALOGUE comes from Messrs. Young & Co., Hatherley, Cheltenham, who are leading Perpetual Carnation growers. This successful firm is a good instance of what specialising in one branch of horticulture can do, and wherever one sees their stand, whether in London, in Dublin, or elsewhere, one sees flowers of good substance and general excellence. The list is an excellent one, and includes good novelties raised at Hatherley. Three sizes of plants are photographed to show customers which to order. Some illustrations and pages are devoted to Perpetual Carnations as out-door bedding plants, while on page 17 an illustration shows a special 60 ft. railway van carrying 60 different orders direct to Ireland.

MESSRS. DICKSONS, of Chester, send their Catalogue of Farm Seeds for 1913. The root crops are well illustrated with a good selection of the various kinds of Swedes and Mangel, Turnips, &c. Grass seeds are quoted for permanent and temporary pastures, and some useful notes given on making permanent pastures. Various

fodder plants and selected seed grain also find a place.

MR. A. GILBERT, 11 Watt Road, Erdington, Birmingham, is the patentee and manufacturer of a very good weather-proof label which is being used, especially for Alpine plants, both at Glasnevin Botanic Gardens and at Kew. For Roses, shrubs, or for the rockery, this is a clear legible label of reasonable price which lasts well, and one which we can recommend. Any name can be printed as required on to the opal tablets which may have stands if needed. Messrs. T. McKenzie and Sons, Ltd., 212 Great Brunswick Street, are the Dublin agents.

Correspondence.

QUESTION. — Please tell me the best way to pack Daffodil blooms—(1) when taking them to a Daffodil Show; (2) when sending them by parcel post.

ANSWER. — *Daffodils for Shows*. — These are trussed or made up in sprays containing 9 to 12 on a bunch, and with moss placed between the stems to keep them rigid and from overlapping, and the ends of the stems are also bound with wet moss. *Daffodils in boxes for post*. — These are packed into shallow boxes of a suitable depth, and occasionally damp moss is also put around the stems. The whole essence of the question is in the packing of the flowers in the boxes, and efficiency in this can only be obtained after some practice. The essential point is to get the boxes as full and compact with bloom as possible.—J. R.

SWEET PEAS

IF YOU WANT

REALLY GOOD SWEET PEAS

AT MODERATE PRICES

SEND TO

ROBERT SYDENHAM LIMITED

55 TENBY STREET, BIRMINGHAM

No one will serve you better

SWEET PEA COLLECTIONS FOR 1913

No. 1.—18 Best Grandiflora Varieties	1 6
No. 2.—12 Good Waved Varieties	2 -
No. 3. 12 Best Waved Varieties	2 6

SPECIAL PRICE FOR THE THREE COLLECTIONS 5/-

GRAND NOVELTIES FOR 1913

And Special Prizes at about 100 Shows
PARTICULARS ON APPLICATION

THE BEST TOMATOES, 3d. per packet of 200 Seeds
THE BEST CUCUMBERS, 6d. per packet of 10 Seeds
THE BEST ONIONS.—Excelsior or Alls Craig, 6d. per packet of about 1,200 Seeds

ALL OTHER SEEDS EQUALLY CHEAP AND GOOD

FULL LIST POST FREE ON APPLICATION

Blackmore & Langdon's BEGONIAS

AWARDED 31 GOLD MEDALS

CATALOGUE FREE

CATALOGUE FREE

Begonia Seed should be sown in the early months of the year to enable the seedlings to give a glorious display of flowers in out-door beds during the late summer and autumn, and that the best may be selected for pot culture next season.

Extracts from recent unsolicited Testimonials

"Seeds last year were superb."

"I must say your seed is excellent; results extraordinary."

"My show of Begonias, all raised from your seed, are every year the admiration and envy of all who see them."

Double Seed, 2s. 6d. and 5s. per packet.
Single Seed, Plain, Filled, or crested, 1s., 2s. 6d. and 5s. per packet.

Dormant Tubers should be bought during February, March or April.

Our Illustrated Catalogue of Begonias, Carnations, Cannas, Cyclamens, Blue Primroses, Delphiniums, Lily of the Valley, Polyanthus, and Violets sent post free on application to—

BLACKMORE & LANGDON
Twerton Hill Nursery—BATH



50,000 EXHIBITION ROSES

Kept clean and in :: :: ::
Perfect Health, with :: :: ::
"NO SUSPICION OF MILDEW"

THROUGH BEING TREATED WITH

"ABOL" NON-POISONOUS INSECTICIDE

[REGD]

READ THE TESTIMONY

"The roses here (50,000) have been treated with your preparation, and are, at time of writing, clean and in perfect health, and throwing up splendid late growths. No suspicion of MILDEW here."
—R. RUSSELL, Head Gardener
White City, Shepherd's Bush
LONDON. :: :: ::

The Safe, Certain and Reliable Remedy for all Insect Pests and Mildew that infest the garden and greenhouse. Clean and wholesome, gives off no unpleasant smell. Does not injure the paint of greenhouses.

$\frac{1}{2}$ pint, 1/-; pint, 1/6; quart, 2/6
 $\frac{1}{2}$ gall., 4/-; gall., 7/6 ::

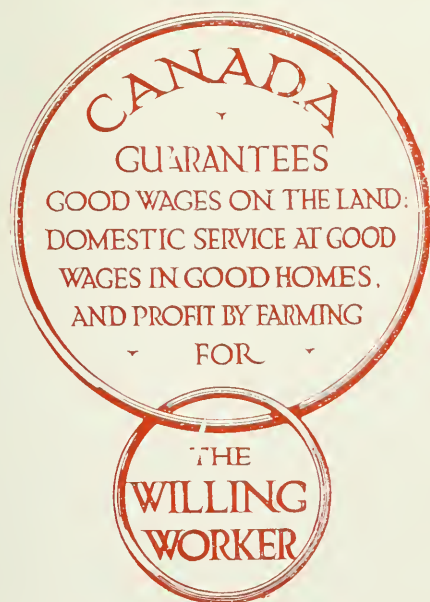
OF ALL NURSERYMEN, SEEDSMEN, &c.
or if any difficulty write the Sole Proprietors and Manufacturers
"ABOL" PATENT SYRINGES

Specially Recommended by
THE NATIONAL ROSE SOCIETY

E. A. WHITE, Ltd., 29 Beltrving, PADDOCK
WOOD, KENT



11
MEDALS AND
AWARDS



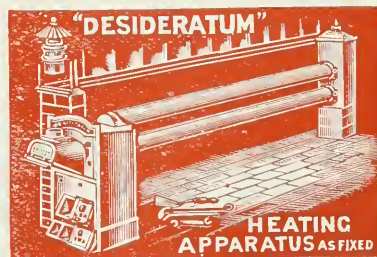
For free maps, pamphlets and full particulars apply to Mr. JOHN WEBSTER, Canadian Government Emigration Agent, 17-19, Victoria Street, Belfast; Mr. EDWARD O'KELLY, Canadian Government Emigration Agent, 44, Dawson Street, Dublin; or to Mr. J. OBED SMITH, Assistant Superintendent of Emigration, 11 & 12, Charing Cross, London, S.W.

THE Desideratum Heating Apparatus

Has proved, by long tried experience, that it cannot be beaten for heating small greenhouses. It is easily worked, is economical in fuel, and is perfectly efficient. Hundreds are sold every season, because it always gives satisfaction.

Illustrated Price List on application
Series I.C

Estimates free on receipt of full particulars



Jones & Attwood, Ltd.
STOURBRIDGE

Canadian Notes.

THE district of Summerland, in the Okanagan Valley, continues to hold the pride of place for apple growing in British Columbia. At the Valley Apple Show held in Vernon at the end of October, Summerland captured twenty prizes with twenty-two entries, eighteen of which were first prizes. The Okanagan district leads as the most developed fruit growing region of the province, and is largely settled by English colonists of the educated class, many of them being retired Anglo-Indian civilians and officers of the services from the United Kingdom.

THE PROGRESS OF AGRICULTURE IN NOVA SCOTIA—During the past year great progress has been made in agriculture. An experimental fruit farm has been established at Kentville, a beautiful rural town in the heart of the great fruit growing district. Professor J. W. Crowe, of Guelph, has been appointed as director. The fruit growers of Nova Scotia expect good results from the experiments made on this

farm. In March, 1912, the Dominion Parliament voted £5,000 to enlarge the Nova Scotia Agricultural College. This work was necessary owing to the increasing number of students attending the long and short courses. This attendance has increased from 85 seven years ago to nearly 500. An assembly hall, 88 by 60 feet, has been erected. Two additional class-rooms have been added. A new horticultural building with greenhouses attached form part of the improvements. There is also an entomological department with a glasshouse attached where insects can be bred and studied at all times of the year. The farm has also been enlarged to the extent of 10 acres. Another advanced step is the establishment of "Illustrated Farms" in the agricultural centres, the objects of which are to promote the mutual interests of the farmers, to increase their knowledge of scientific farming, and generally to improve the conditions of country life. Co-operation among farmers has rapidly increased during last year. Twenty-nine fruit growers' associations have united in a central organisation which has been incorporated by the Legislature.

PERPETUAL CARNATIONS. 125 varieties. Ask for Illustrated Catalogue. Full particulars. Post free. Healthy Guernsey Plants, in small pots, from 3/- per doz. Can be planted outside. Patronised by Royalty.

VAN DER SLUYS, F.R.H.S., Ramee, Guernsey.

CHRYSA NTHEMUMS.

Early-flowering, Exhibition, and Decorative

CARNATIONS. **PERPETUAL-FLOWERING.**

CATALOGUES FREE

PRICE & FYFE, Grove Park Nursery, **LEE, S.E.**

THOMSON'S CELEBRATED MANURES

IDEAL FERTILIZERS



1868

1913

SAFE, SURE AND LASTING

The result of many years' practical experience

Vine, Plant and Vegetable Manure.—1 cwt. 20/-; ½ cwt. 10/-; ¼ cwt. 6/-; 14 lbs., 3/6; 7 lbs., 2/6; Tins, 2/6 1/- and 6d. Carriage paid on 1 cwt. anywhere

Special Top-dressing Manure.—½ cwt., 20/-; ¼ cwt., 11/-; 14 lbs., 6/-; 7 lbs., 3/6; Tins, 1/- Carriage paid on ½ cwt. anywhere

Also Thomson's Book on the Vine. Thomson's Sytptic
SOLD BY NURSERYMEN & SEEDSMEN EVERYWHERE

Write for Pamphlets, Price Lists, &c., to Sole Makers

MACKERETH'S SPECIAL SWEET PEA MANURE

The thought-out ideal Sweet Pea Food

MR. E. COWDY and MR. A. E. USHER
both use it!

THIS IS TESTIMONY ENOUGH!

It imparts sturdiness and vigour to the haulm and foliage. Increased size and higher colour to the blooms. Greater length and stoutness to flower stems ::

May be had from Messrs. Edmondson Bros., 10 Dame Street, Dublin; Mr S. A. Jones, 68 High Street, Kilkenny; Messrs. S. McGredy & Son, Portadown; Mr. Jas. Walsh, Portadown; or Messrs. Ritchie & Co., Belfast. In tins 1- each (post free, 1/4); 2/6 each (post free, 3/-); In bags, 11 lbs., 5/-; 28 lbs., 8/6; 56 lbs., 14/-; 112 lbs., 25/-
CARRIAGE PAID

or direct from . . .

G. H. MACKERETH

The Sweet Pea Clearing House

ULVERSTON

The most unique Sweet Pea list in the world
with intense cultural directions will be posted
on receipt of post card

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COLLECTIONS OF VEGETABLE AND FLOWER SEEDS

FOR GARDENS OF ALL SIZES.

One of these Collections, composed of the finest varieties, selected with great care and packed in the right quantity to prevent waste, will certainly meet your every requirement for the coming year, and save the worry entailed in selecting the varieties and quantities to suit your Garden :: :: ::

"Parcel Post" Collections of Vegetable Seeds only

22 varieties, 5/-; 32 varieties, 7/6
39 " 10/6; 43 " 12/6

"Parcel Post" Collections of Vegetable and Flower Seeds

22 vars. of Vegetable Seeds & 8 vars. of Flower Seeds 7/-
32 " " 12 " " 10/-
39 " " 18 " " 14/-
43 " " 24 " " 17/6

"Rail" Collections of Vegetable Seeds only

From 2/- to £10 10s.

Collections of Flower Seeds only

From 2/6 to £3 3s.

CARRIAGE FREE

Full particulars on application . . .

SUTTON & SONS
The King's Seedsmen
READING



THE WARGRAVE PLANT FARM LIMITED

Herbaceous and :: ::
Alpine Plant Specialists

A FEW CHOICE SUBJECTS REALLY WORTH GROWING :

	Each	per doz.
	s. d.	s. d.
Aubrietia Lloyd Edwards, rich violet purple	0 9	7 6
Dianthus multiflorus Napoleon III., red crimson	0 9	7 6
Gypsophila dubia, rose flowers, crimson stems	1 0	10 0
Geum chilense Mrs. Bradshaw crimson	0 9	7 6
Lithospermum prostratum Heavenly Blue	1 0	10 0
Lychnis Lagascae rosea, soft rose	1 0	10 0
Oxalis enneaphylla, true species	0 9	7 6
Pyrethrum Cassiope, crimson	2 0	20 0
Saxifraga Red Admiral, crimson	1 0	10 0

All the above and thousands of others fully described in our Hardy Plant Catalogue, post free.

THE WARGRAVE PLANT FARM
LIMITED

LIVERPOOL ST. ARCADE, LONDON, E.C.

Nurseries : TWYFORD, BERKS.

VISITORS INVITED.

Mackey's

POPULAR BOXES OF GARDEN SEEDS

PRICES 5s. 6d., 10s. 6d., 12. 6d. and 21s. Carriage Paid.

¶ The Details of these are published in Mackey's Garden Manual. The best strains only of each class of Vegetable are employed, and so liberally as to ensure the utmost value to the purchaser.

¶ That there is no question as to the unique value of these collections is proved by the annually increasing number of repeat orders received from all parts of the country

Sir James W.
MACKEY
LTD.

Seedsmen, 23 Upper
Sackville St. DUBLIN.

Notes.

VINCA MEDIA.

THIS Periwinkle, perhaps more frequently met with under the name of *V. difformis*, is deserving of far more general culture than at present accorded to it. Even if it flowered during the summer months it would command attention, but flowering, as it does, throughout the dullest period of the year, from August to February, when the number of outdoor flowering plants is extremely limited, it is a decided acquisition to any garden. *V. media* is in point of vigour and habit intermediate between *V. major* and *V. minor*. The leaves are ovate-elliptic in shape, glabrous, and of a shining green colour. The flowers, which are of a pretty pinkish shade of white, about three-quarters of an inch across, are borne freely on stiff erect stems about 1 foot high. As in the case of the common Periwinkle, the flowerless stems trail along the ground, sometimes taking root. *Vinca media* will succeed in any of the positions usually occupied by the commoner species, and will spread just as rapidly.—R.

MECONOPSIS CHELIDONIFOLIUS.

AN addition to the Himalayan Poppies. Apparently this new comer has a very great advantage over most of its brethren, in that it seems to be a good perennial, and may be easily increased by division, and even by plantlets forming on the flower stems. The plant is very distinct and attractive, about 1½ to 2 feet high, although the flowers are not showy, being yellow, about 1½ inches across.

Show Fixtures for 1913

March	6th—Co. Louth Spring Show.
April	16th—Ennis, Co. Clare Horticultural Society, Spring Show.

April 16th, 17th	R. H. S., Dublin Spring Show.
May 28th, 30th	Belfast Show.
June	19th—Kilkenny Summer Show.
.. 25th, 26th	Mallow Show.
.. 30th	Newry Show.
July 8th, 9th	Cork Summer Show
.. 12th	Malahide, Fingal Horticultural Society.
.. 15th	Dundrum, Co. Dublin.
.. 18th	Stillorgan and Foxrock.
.. 19th	Lucan, Saggart and Clondalkin.
.. 23rd	Ulster Rose and Floral.
.. 26th	Terenure and District.
.. 30th	Kingstown Horticultural Show.
.. 30th	Co. Clare Horticultural Society, Summer Show at Ennis.
.. 31st	Fethard Flower Show. (See advertisement, page i.)
Aug. 5th	Navan Show.
.. 13th	Ballinasloe, Co. Galway, Horticultural Society.
.. 14th	Killarney.
.. 15th	Naas District.
.. 26th	R.H.S., Dublin Autumn Show.
September 1th	County Kilkenny Horticultural Show.
Oct. 22nd, 23rd	R.H.S., Dublin Winter Show.

Disease-Resisting Potatoes

Two magnificent New Late Varieties

LEINSTER WONDER

(WILLIAMSON'S)

VITALITY

(RICHARDSON'S)

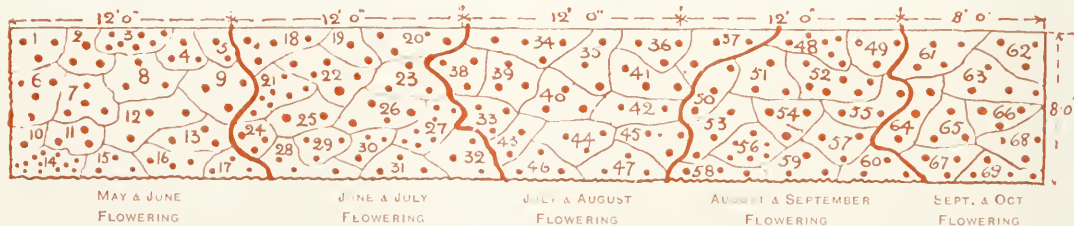
IRISH GROWERS SHOULD GIVE
THESE A TRIAL

Illustrated Pamphlets free.

J F. WILLIAMSON, F.R.H.S.
MALLOW, CO. CORK

PLANT NOW . A BEAUTIFUL GIBSON BORDER

FOR SUCCESSIONAL MASSES OF BLOOM.



This border is 56 ft. long, 8 ft. wide, and contains a total number of 240 plants, named, numbered, and delivered carriage paid for **£5 10s.** Full particulars and Catalogues of Hardy Plants, Fruit Trees and Yorkshire grown Roses sent free. Larger or smaller borders arranged and supplied at proportionate cost.

GIBSON & CO. (DEPT. A) LEEMING BAR, BEDALE

SWEET PEAS

Edmondson's Eblana Collections

25 Varieties, 25 seeds each ————— for 1s. 6d.
 25 Varieties, 50 seeds each ————— for 2s. 6d.
 The "Minor Eblana" Collection, 12 choice sorts, 1s.
 The "Novelties" Collection ————— 12 novelties, 5s.
 Eblana Mixture, 1 qt. 5s., 1 pt. 2/6, $\frac{1}{2}$ -pt. 1/6, 1 oz. 3d.
 Giant-flowered Mixture, 1 lb. 5s., $\frac{1}{2}$ -lb. 2/6, 1 oz. 6d.
 Spencer Mixture, 1 lb. 12/6, $\frac{1}{2}$ -lb. 6/6, $\frac{1}{4}$ -lb. 3/6, 1 oz. 1s.

EDMONDSON BROTHERS

SEEDSMEN

10 DAME STREET ————— DUBLIN

WM. DUNCAN TUCKER & SONS, LTD.



Illustrated Catalogue No. 18, post free

MODERN GLASSHOUSES Replete with the latest improvements. Artistic Designs, and best workmanship and materials, combined with utility and economy. Estimates and Plans given for Winter Gardens, Conservatories, and Glass-houses of every description * *

All varieties of Garden Frames in * * stock * *



No. 38 Frame

Office and Showrooms: 27 CANNON STREET, LONDON, E.C.

CUSTOMERS CANNOT UNDERSTAND HOW WE CAN GIVE OUR FAMOUS

"G" BRAND GARDEN CLOGS
 (Beautifully Felt Lined)

FOR **3/6** POSTAGE PAID

MEN'S, WOMEN'S, YOUTHS or GIRLS

Our Grained Leather Wood-soled Boots (or Clogs) are ideal for working on the damp ground

Shops supplied by the dozen at keen prices.



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 (Dept. 27) 4 WELLINGTON STREET — GLASGOW

AGRICULTURAL MOTORS

From 7-50 h.p. from £120. Burning Oil

OIL ENGINES STATIONARY AND PORTABLE ::

From 1 h.p. Price from £18

HORSE HOE NEW PATENT EXPANDING RICID AND LASTING ::

No loose wearing parts

WINDMILLS FOR PUMPING WATER ::

Erected complete, low prices, good workmanship and material

KINGDON & CO., ENGINEERS & CONTRACTORS

13 King Street, Cheapside — LONDON, E.C.

Dublin Wholesale Markets.

THE quantities of flowers, fruit, and vegetables were well maintained for the past month. Home grown apples were in good demand, and first quality fruit realised a high price. The necessity for grading fruit for market must be insisted upon if good prices are ever to be obtained. One has only to look at the barrels and cases of foreign fruit, and to contrast them and the prices obtained with our own, to get an object lesson in this respect.

The supply of cabbages was large, and prices therefore low. Broccoli are taking the place of cabbages, and the demand for them has increased the price. Brussels sprouts, artichokes and celery were plentiful, the last-named being hard to get rid of even at low prices. There was a limited supply of new potatoes from the Channel Islands. Rhubarb, seakale and asparagus were well in evidence, but owing to the high price asked the demand was low.

The increasing number of varieties of cut flowers and pot plants, which were to be seen, would indicate that spring will soon be with us. Daffodils, Tulips, Arum Lilies and Violets formed the bulk of the cut flowers; while Primulas, Cinerarias and Begonias were prominent among the pot plants.

PRICE LIST—FRUIT.		From	To
		s. d.	s. d.
Apples—			
Bramley's Seedling	per barrel	11 6	18 0
Bramley's Seconds	..	6 6	10 0
Selected			
Bramley's	per dozen	1 1	1 8
Mixed lots	per float	1 0	1 6
Grapes	per lb.	1 6	1 8

CUT FLOWERS.			
Freesias	per bunch	1 1	1 6
Arum Lilies	per dozen	1 9	2 0
Carnations	..	1 8	1 10
Chrysanthemums	per bunch	0 10	1 0
Daffodils (Golden Spur)	..	0 9	1 0
Lily of the Valley	..	0 8	1 0
Tulips	..	0 7	0 10
Violets	per doz. bunches	1 6	1 8

VEGETABLES.			
Beet	per float	0 5	0 7
Brussels Sprouts	..	1 0	1 8
Broccoli	per flasket	2 0	2 3
Cabbage (York)	per load	6 6	12 0
Do. (Savoy)	..	8 0	11 0
Celery	per dozen	1 1	1 8
Leeks	..	0 2	0 3
Onions	per float	1 3	1 6
Parsnips	per bag	1 9	2 3
Parsley	per tray	0 6	0 9

Vegetables—continued		s. d.	s. d.
Rhubarb	per dozen	0 5	0 7
Radishes	..	0 10	1 0
Swedes	per cwt.	0 9	1 0
Thyme	per doz. bunches	1 0	1 2
Turnips (White)	per bunch	0 3	0 1

T. B.

NOTICE

SECRETARIES of Irish Horticultural Societies will greatly oblige by sending to the Editor of IRISH GARDENING early notice of dates and other particulars of their Shows for 1913, or of any Shows which include Horticultural Classes. :: :: ::

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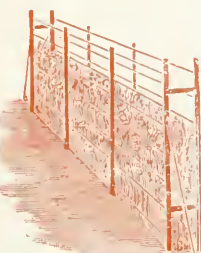
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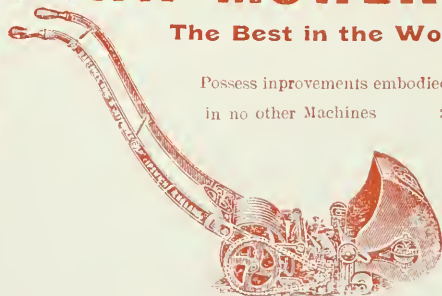
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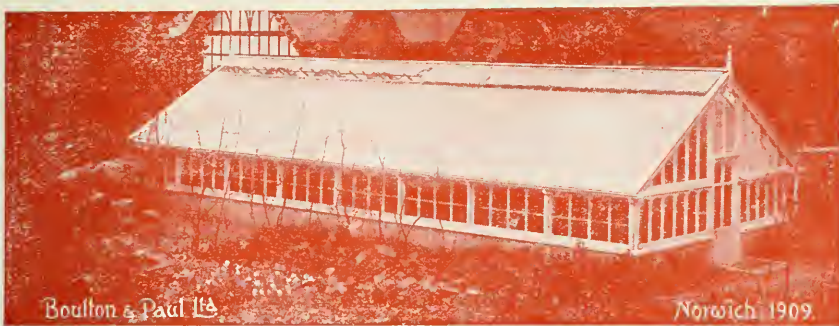
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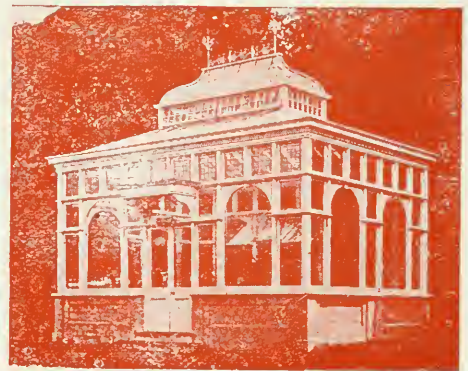
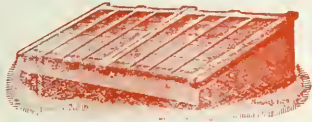
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One Plant of each of the above varieties for	18/-
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Achillea Rupestris, *Ethionema Coridifolium*, *Anthemis Aizoon*, *Arenaria cespitosa aurea*, *Aubrietia H. Marshall*, *Campanula garganica*, *Campanilla pusilla*, *Chieranthus Albionii*, *Crucianella Stylosa Purpurea*, *Dianthus Deltoides*, *Draba Azoides*, *Erinus Carmineus*, *Gypsophila repens rosea*, *Iberis Little Gem*, *Hypericum Reptans*, *Lychnis Alpina*, *Saxifraga Rheisuperba*, *Saxifraga Aizoon Roseus*, *Sedum Album*, *Silene Alpestris*, *Thymus coccineus*, *Tunica Saxifraga*, *Veronica prostrata*, *Veronica Trehane*, *Viola cornuta purpurea*.

ONE Plant of each of the above varieties for	9/-
TWO Plants do. do.	17/-
THREE Plants do. do.	24/-

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Specially Selected for Cutting Purposes.

Achillea W. B. Child, *Aconitum Bicolor*, *Anthemis Kelwayi*, *Aster Mesa grande*, *Campanula Moerheimi*, *Centaurea Macrocephala*, *Chrysanthemum Maximum King Edward*, *Dracocephalum Speciosus*, *Erigeron Speciosus Superbus*, *Galega compacta*, *Gypsophila paniculata*, *Helenium plumulum Magnificum*, *Helianthus Maximus*, *Helopsis Pitcheriana*, *Heuchera Edge Hill variety*, *Lupinus Polyphyllus*, *Phlox Coquelicot*, *Pyrethrum Jubilee*, *Pyrethrum Hamlet*, *Ranunculus Acris*, *Scabiosa Caucasica*, *Sidalcea Rosy Gem*, *Solidago Canadensis Nana*, *Statice Latifolia*, *Veronica Longifolia rosea*.

ONE Plant of each of the above varieties for	9/-
TWO Plants do. do.	17/-
THREE Plants do. do.	24/-

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The whole of the 12 varieties offered on account of their free-blooming nature and delightful colouring are well worth a place in every Rock Garden.

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SWEET SULTAN. —Purple, White, Yellow each - - -	3d.
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and mixed - - -	each
VISCARIA, mixed - - -	3d.

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Royal Horticultural Society.

THE monthly meeting of the Council was held at the Society's offices, 5 Molesworth Street, Dublin, on the 11th ult. The Duke of Abercorn, in acknowledging the Council's vote of condolence passed at the last meeting, intimated that he would hold office as a Vice-President of the Society. The recommendation of the Schedule Committee as to the periodical publication of a record of the Society's proceedings, with matters of interest to members, was approved, it being contemplated to publish this after each show, when the list of prize-winners can be given and also salient points in connection with the exhibits. The record will be furnished to members free. Sir Frederick Moore (Hon. Sec.) read a letter from the Royal Dublin Society stating that a grant of £10 had been made for Apple prizes at the Winter Show; this, with the long list of prizes presented by the Department of Agriculture, in the interests of Irish fruit growing, and the special classes for which the prizes have been contributed by the Vice-Presidents, Members of Council, and Practical Members of the Society, together with the Society's own prizes and medals, make altogether a particularly large, varied, and interesting schedule. Judges were nominated for the Spring Show, April 16 and 17, in view of the nearness of which the Council arranged to meet on the 11th inst., instead of the usual second Friday in the month. Mr. T. P. Brophy, Herbertstown, Athgarvan, was elected a member, and Mr. G. Barker, Lord Iveagh's grounds, Stephen's Green, a practical member of the

Society. A vote of thanks was accorded to Messrs. Chas. Ramsay & Sons for some nice Daffodils and Tulips sent in to the meeting from the Royal Nurseries, Ballsbridge.

Catalogues.

A 1913 catalogue comes from MESSRS. WATSON & SONS, of Clontarf. Tremendous strides have been made of late years in the improvement of Herbaceous Plants, and the interest taken in Alpines has greatly increased. To meet this growing demand for these subjects Messrs. Watson have added largely to their collections, and now their lists of Alpines and Herbaceous Plants are good and representative, including many good novelties. The catalogue also includes early flowering Chrysanthemums, Carnations, the New Peony-flowered Dahlias and others, Pentstemons, Violas. Among the Pyrethrums we note that sterling novelty Queen Mary, and a useful list of hardy climbers and wall shrubs.

"THE WHINS," in Chalfont St. Peter, Bucks, is a successful garden home, where those who are making gardening a hobby will find rest and healthy occupation, also the serious-minded student receives competent instruction and has an opportunity to study hardy Herbaceous Flowers and Alpines, both new and old. Additional attractions are the bracing air and the beautiful scenery of the Chilterns. The farm specialises in "Silvery-leaved plants," and their Silver List is well worth perusal by those who are looking out for good Herbaceous and Alpine Plants.

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1 gallon, to make 51 gallons, in solution . . . 3/6
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28 lbs. 4/6 1/2-cwt. 7/6 1 cwt. 11/6
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In Decorated Tins.

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It can be applied with syringe or pump, or used for dipping.

PRICES Half-pint, 1/-; pint, 1/6; quart, 2/6; half-gallon, 4/-
gallon, 7/6; five gallons, 25/-; ten gallons, 40/-
1 gallon sufficient for 80 gallons of water.

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(Established over 35 Years)

Exceeds all others in General Fertilising Properties and Staying Powers

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This preparation is for destroying Daisies and other weeds on lawns, and at the same time stimulating the growth of the grass. If one tin is tried as a sample, its value will be at once appreciated. Sales are largely increasing.

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1 cwt., 30/-

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12 galls. £1 13s., 20 galls. £2 7s. 6d., 40 galls. £4 10s.

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completely eradicates all kinds of weeds on lawns of every description ::

1 ton £19, 10 cwt. £9 15s., 5 cwt. £5, 1 cwt. £1 1s.
1/2 cwt. 12/-, 1/4 cwt. 7/6. Tins, 2/6, and 1/- each

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THE ACME CHEMICAL CO., LTD., send a list of their specialities. They claim twenty-five years' experience in supplying gardens, parks and estates, and most of the goods offered have been well proved and stood the test of time. The "Acme" Weed Killer is used in the gardens of the Royal Horticultural Society, Kew, Crystal Palace, &c. Roads and paths may be kept clean by its use at a small cost. "Acme" Summer Shading is easily applied and effective. A Winter Wash, as recommended by the Board of Agriculture, is also made to keep fruit trees clean and healthy. Some of the firm's other specialities are:—Acme Lawn Sand, Lawn Manure, Lime-Sulphur Wash, Worm Killer, Mildew Destroyer, Spraying Machines, &c. Their Dublin agents are Messrs. Drummond & Co. and Messrs. Hayes, Conyngham & Robinson.

C. F. A. VAN DER SLUYS, Ramée, Guernsey, sends a 1913 catalogue of Perpetual Flowering Carnations. The list contains 125 of the best and newest varieties grown and guaranteed true to name and free from disease. The plants are sent out in three sizes—rooted plants, plants in small pots, and strong plants in 3 and 4-inch pots, with 3 to 5 breaks, and carriage is paid on orders of 4s. and over. The list is a good descriptive one, and at the end will be found some useful hints on growing the plants, and some sundries required by Carnation growers.

E. A. WHITE, LTD., Beltring, Paddock Wood, Kent, send a booklet entitled "Steps to a Perfect Garden." Of course there are many steps to be taken in order to make and keep a garden in perfect condition. This booklet tells us how to

keep our plants healthy and how to get rid of the various insect pests and fungoid diseases. The Abol syringe and other specialities for the garden are well-known, and the advice given is simple and easy to follow, concise, and very much to the point.

Correspondence.

DEAR SIR, —With reference to *Mazus rugosus*, for which we were granted an Award of Merit at the Royal Horticultural Meeting on March 4th, we have much pleasure in sending you the following particulars respecting the plant, as there appears to be some doubt existing as to whether it is a perennial.

The plant originally came from the Himalayas, and spreads by means of procumbent stems, which root as they grow, and produces flowers one inch in height. The fact that each rooted stem had a flower when exhibited seems to have given the impression to many people that it was a pan of seedlings. When established it literally covers itself with flowers during the early spring months, also producing a few solitary flowers during the summer, which are of a deep mauve colour, freely spotted orange on a white ground. The plant is undoubtedly perennial.

Johnson's Gardening Dictionary, 1868, describes both *Mazus rugosus* and *Mazus pumilio* as hardy annuals, but there can be no doubt that this description is erroneous.

Respecting *Mazus pumilio*, this is quite a distinct plant. It produces slender underground rhizomes, and the leaves are spatulate, with slightly waved edges, which are about one inch

SWEET PEAS

Edmondson's Eblana Collections

25 Varieties, 25 seeds each ————— for 1s. 6d.
 25 Varieties, 50 seeds each ————— for 2s. 6d.
 The "Minor Eblana" Collection, 12 choice sorts, 1s.
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 Eblana Mixture, 1 qt. 5s., 1 pt. 2/6, $\frac{1}{2}$ -pt. 1/6, 1 oz. 3d.
 Giant-flowered Mixture, 1 lb. 5s., $\frac{1}{2}$ -lb. 2/6, 1 oz. 6d.
 Spencer Mixture, 1 lb. 12/6, $\frac{1}{2}$ -lb. 6/6, $\frac{1}{4}$ -lb. 3/6, 1 oz. 1s.

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**A TREATISE ON GARDEN PESTS, fully Illustrated—entitled
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Double Seed, 2s. 6d. and 5s. per packet.

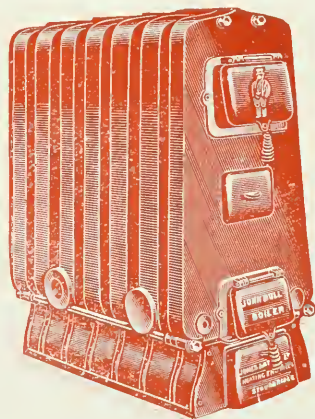
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Dormant Tubers should be bought during February, March or April.

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long, and only produces its flowers during the summer months, whereas *Mazus rugosus*, as we have before stated, flowers during the early spring and summer months.

As to the date of introduction we are not quite sure.

Trusting our explanation will clear the existing doubt. We are, yours faithfully,

THE WARGRAVE PLANT FARM, LTD.

Irish Gardeners' Association and Benefit Society.

IN presenting their report and statement of accounts for the year ending 31st December, 1912, the Committee have much pleasure in recording the considerable progress attending the activities of the society. The annual general meeting was held in the D. B. C. Rooms on January 31st—the president, E. Knowlton, F.R.H.S., in the chair—when the annual report was read and adopted. The officers for 1913 were duly elected: Mr. James Colgan being unanimously elected president. The programme as published in last report was carried out successfully, and the thanks of the members are due and hereby tendered to the various gentlemen who kindly undertook to deliver the different lectures, viz.:—Sir Frederick Moore, V.M.H.; C. F. Ball, Esq.; R. J. Hoskin, Esq.; Messrs. J. H. Cumming, M. Byrne, &c. The annual dance and

re-union was held in the D. B. C. Rooms in January, and proved highly successful, being attended by a large number of members and their friends. The outstanding feature of the year as it affects your society was the coming into operation of the National Health Insurance Act. At a general meeting of the society specially summoned to consider the attitude to be adopted, it was unanimously decided that application be made to the National Insurance Commissioners (Ireland) to obtain their consent to the formation of an approved section for the administration of the Act. Rules were drawn up and submitted. A certificate of approval was duly granted on 20th June. The section was put into operation without delay, and the success of its working up to the present is a matter for sincere congratulation. As was to be expected, one result of this recognition by the Insurance Commissioners was to bring a considerable influx of new members into the society. This accession of members not only applied to the approved section, but the original society has also increased its membership by 83 during the year. The balance sheet and statement of accounts as certified by the auditors, which accompanies this report, reveals a healthy state of affairs, with a substantially increased balance on the credit side. The committee have had under special consideration the better investment of the society's funds, and they decided to withdraw from the G.P.O. Savings Bank a sum of £300, which was earning only a small interest, and have re-invested same in the G. S. & W. Ry. and G. N. Ry. stocks, now earning a guaranteed interest of 1 per cent. per annum. Your society

THOMSON'S CELEBRATED MANURES IDEAL FERTILIZERS

1868

1913



SAFE, SURE AND LASTING

The result of many years' practical experience

Vine, Plant and Vegetable Manure.—1 cwt. 20/-; ½ cwt. 10/-; ¼ cwt. 6/-; 14 lbs. 3/6; 7 lbs. 2/6; Tins, 2/6 1/- and 6d. Carriage paid on 1 cwt. anywhere.

Special Top-dressing Manure.—½ cwt., 20/-; ¼ cwt., 11/-; 14 lbs. 6/-; 7 lbs., 3/6; Tins, 1/-; Carriage paid on ½ cwt. anywhere.

Also Thomson's Book on the Vine. Thomson's Styptic

SOLD BY NURSERYMEN & SEEDSMEN EVERYWHERE

Write for Pamphlets, Price Lists, &c., to Sole Makers

MACKERETHS SPECIAL SWEET PEA MANURE

The thought-out ideal Sweet Pea Food

MR. E. COWDY and MR. A. E. USHER
both use it!

THIS IS TESTIMONY ENOUGH!

It imparts sturdiness and vigour to the haulm and foliage. Increased size and higher colour to the blooms. Greater length and stoutness to flower stems ::

May be had from Messrs. Edmondson Bros., 10 Dame Street, Dublin; Mr. S. A. Jones, 68 High Street, Kilkenny; Messrs. S. McGredy & Son, Portadown; Mr. Jas. Walsh, Portadown; or Messrs. Ritchie & Co., Belfast, in tins 1 cwt. each post free, 14/-; 2 ½ cwt. each (post free, 3/-); in bags, 11 lbs., 5/-; 28 lbs., 8/6; 56 lbs., 14/-; 112 lbs., 25/-
CARRIAGE PAID

or direct from . . .

G. H. MACKERETH

The Sweet Pea Clearing House

ULVERSTON

The most unique Sweet Pea list in the world
with intense cultural directions will be posted
:: :: on receipt of post card :: ::



By purchasing one of our collections to suit the size of your garden you will obtain a sufficient supply of seed to make a magnificent display throughout the summer months at an extremely low cost.

SUTTON'S COLLECTIONS OF FLOWER SEEDS

For full particulars of all the best Flower and Vegetable Seeds see Sutton's Amateur's Guide in Horticulture for 1913.

FROM 2/6, 5/-

7/6, 10/6, 15/-, 21/-

TO £3 3 0 POST FREE.

SUTTON & SONS, THE KING'S SEEDSMEN, READING

DEATH TO ALL INSECT PESTS

AT THIS TIME OF THE YEAR Glasshouses are infested with Green Fly, Black Fly, Spider and other injurious pests, which sap the vigour from the plants and prevent them thriving.

Rid Your Plants of Pests

For this purpose nothing can be better, more economical, or safer than

McDOUGALL'S FUMERS AND TOBACCO SHEETS

NO SPIRIT REQUIRED. NO LIQUID POISON.

Efficiency and strength guaranteed by the oldest established Manufacturers of Horticultural Specialities.

SOLD BY NURSERYMEN, SEEDSMEN & FLORISTS
THROUGHOUT THE WORLD.

THE WARGRAVE PLANT FARM LIMITED

HERBACEOUS AND ALPINE PLANT SPECIALISTS

NEW AND RARE PLANTS

Mazus rugosus. A beautiful and rare little Alpine producing Lavender blue flowers with white throat, freely spotted brown, height 1 inch.

A.M. R.H.S. A.M. N.H.P.S.

1/6 each; 15/- per dozen

Gypsophila dubia (new). Pale rose coloured flowers, with deep purple stems, very striking, even when not in flower
1/- each; 10/- per dozen

Oxalis enneaphylla. The true Falkland Island species

9d. each; 7/6 per dozen

The above and thousands of others fully described in our Hardy Plant Catalogue, post free.

THE WARGRAVE PLANT FARM LIMITED

LIVERPOOL ST. ARCADE, LONDON, E.C.

Nurseries: TWYFORD, BERKS.

VISITORS INVITED.

continues to enjoy increasing financial support from the seed and nursery trades throughout the British Isles, as will be seen by reference to the list of subscribers in this section. The decision of the council of the 1912 International Horticultural Exhibition (London), out of the surplus profits of the exhibition, to award a grant of £100 to the funds of the Association is also a matter for congratulation. The grant alluded to, however, has not reached the treasurer up to the time this year's balance sheet was completed. The marked improvement in the membership during the year will, the Committee hope, act as a stimulus to members to prevail on their friends who are not yet members to enrol themselves in the Irish Gardeners' Association and Benevolent Society. This they can effect by making known the substantial benefits conferred by membership in a popular and prosperous society such as ours. The committee return their warmest thanks for the hearty support and co-operation of the members accorded them throughout the year.—(Signed), THOMAS MASTERSON, Chairman: JAS. J. McDONOUGH, Secretary.

Show Fixtures for 1913

April 16th, 17th—R. H. S., Dublin Spring Show.
May 28th, 30th—Belfast Show.
June 19th—Kilkenny Summer Show.
" 25th, 26th—Mallow Show.
" 30th—Newry Show.

July 8th, 9th—Cork Summer Show
" 12th—Malahide, Fingal Horticultural Society.
" 15th—Dundrum, Co. Dublin.
" 18th—Stillorgan and Foxrock.
" 19th—Lucan, Saggart and Clondalkin.
" 23rd—Ulster Rose and Floral.
" 26th—Terenure and District.
" 30th—Kingstown Horticultural Show.
" 30th—Co. Clare Horticultural Soc.ety, Summer Show at Ennis.
" 30th—North Kildare and District Horticultural Society at Straffan House, Straffan.
" 31st Fethard Flower Show. (See advertisement, page i.)
Aug. 5th—Navan Show.
" 8th—Portumna Show.
" 13th—Ballinasloe, Co. Galway, Horticultural Society.
" 14th—Killarney.
" 15th—Naas District.
" 21st, 22nd—Larne Flower Show.
" 26th—R.H.S., Dublin Autumn Show.
September 4th—County Kilkenny Horticultural Show.
" 4th—Newtownards Hort. Society.
Oct. 22nd, 23rd—R.H.S., Dublin Winter Show.
November 1st—Co. Clare Fruit and Farm Produce Show.
" 11th, 12th—Ulster Horticultural Society Chrysanthemum Show.

Smith's "Perfect" Patent Powder

MARVELLOUS INVENTION

MOST EFFECTIVE

Nothing like it ever seen before. Soluble in Cold Water.
All Tins Free. No Return Empties.

4 Tins when mixed with water will cover about 100 square yards.

1 Tin, sufficient to make	25 gallons	£0	1	9	
1 Tin	100 ..	0	6	6	
8 Tins	200 ..	0	12	6	Box 3d. extra
12 Tins	300 ..	0	17	0	4d. ..
20 Tins	500 ..	1	7	0	6d. ..
10 Tins	1,000 ..	2	8	0	1s. ..

Carriage Paid on 8 Tins to and upwards Stations in Ireland.

TESTIMONY

ENNISCORTHY.

The Powder Weed Killer
I got from you last month
is the best I ever used.

GLENELLEN, MILTOWN.

Your Weed Killer is the
only one I ever tried that is
any use. Yours never fails.

L. CREAGHE CREAGHE-
HOWARD

SMITH'S LIQUID WEED KILLER

One gallon to make 25 gallons for use

1 gallon	1	9	6	gallons	9	6	16	gallons	1	2	0
2 ..	3	6	8	..	12	6	18	..	1	5	0
3 ..	5	0	10	..	14	0	20	..	1	7	0
4 ..	6	6	12	..	17	0	40	..	2	8	0
5 ..	8	0									

Carriage Paid on 8 gallons and upwards.

1 Gallons when mixed will cover an area of about 100 square yards.

	Double Strength (1 to 50)	PRICES —	
1 gallon	3 6 5 gallons	13 6	16 gallons 38 0
2 ..	6 6 6 ..	16 0	20 .. 46 0
3 ..	9 3 8 ..	21 0	10 .. 88 0
4 ..	11 6 10 ..	25 0	

Carriage Paid on 4 gallons and upwards. Drums and Casks charged extra, but full price allowed when returned in good conditions carriage paid

IRISH AGENT—

NOTICE. These Preparations are Poisonous. Sole Proprietors, MARK SMITH, Ltd.

D. M. WATSON, M.P.S.,

Horticultural
Chemist

61 South Great George's Street
DUBLIN

Telephone, 1971

THE THRIFTY GARDENER'S ANNUAL OPPORTUNITY.

Good Sound Material and Workmanship at Prices 15 to 50 per cent. below any other Firm.

SPAN ROOF GREENHOUSES.



GREENHOUSE.

We guarantee every greenhouse well and soundly made of thoroughly seasoned timbers. The size of framework is in proportion to the size of the house, the lower part being filled in with tongued and grooved boards. Each

house is fitted with half-glass door, complete with lock and brass furniture, ventilators in the sides and roof, according to the size of house, with all



CONSERVATORY.

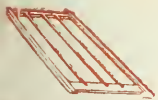
necessary iron-work for opening same. The whole painted one coat. Strong latticed staging for plants each side entire length. The sections are screwed together and every part marked and

numbered ready for erection on arrival. Best 21 oz. glass throughout, and put free on rail at our works. Conservatory has diagonal panels, gutters, downpipes and footpath.

Long	Wide	Ridge	Eaves	Span	Green	Conservatory
ft.	ft.	ft.	ft.	ft.	House	ft.
6	5	1	0	4	0	£2 10
7	5	1	0	4	0	3 0
8	5	1	0	4	0	3 5
9	5	1	0	4	0	3 10
10	7	1	6	4	6	4 0
12	8	8	0	5	0	5 15
15	9	8	6	5	0	7 10
20	10	9	0	5	6	9 15
25	10	9	0	5	6	11 0

Tarred sleepers to erect these houses on. 3d. per ft. run. Estimates for erection by our men on application.

GARDEN LIGHTS.



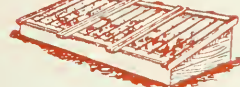
Specification. These lights are substantially constructed of good, sound well-seasoned deal; the stiles, which are 2 in. by 2 in., being well mortised and pinned to tenon rails properly rabbeted for the glass and fitted with 2 in. sash bars. The glazed lights are painted one coat and the glass in same oiled and bedded in superior oil putty. Put on rail at our works.

	Unglazed	With Glass	Glazed
	s. d.	s. d.	s. d.
6 ft. by 4 ft.	3 6	7 0	9 0
5 ft. by 3 ft. 6 in.	3 3	6 0	7 6
4 ft. by 3 ft.	3 0	5 0	6 6
3 ft. by 2 ft.	2 3	3 6	4 6

Special strong Market Gardener's Light for rough use. 3 in. by 2 in. stiles with iron bar. 6 ft. by 4 ft., 4s. 9d. each. 54s. per doz. unglazed.

MELON AND CUCUMBER FRAMES.

These are very useful frames, being suitable for the storage of plants in winter, and well adapted for the cultivation of Melons, Cucumbers, &c., in summer. They are composed of 14 in. deal boards, 16 in. high at back and 11 in. in front, have necessary parting pieces, and runners for the lights, which are 2 in. thick, and are glazed with good 21 oz. glass, nailed and bedded in oil putty, and fitted with an iron handle. Painted two coats.



THREE LIGHTS AND FRAME.

	ft.	ft.	s. d.		ft.	ft.	s.
1 Light	4	by	3	16	0	0	0
Frames,	4	by	4	19	0	3	
"	5	by	4	22	0	3	
"	6	by	4	24	0	4	
2 Light	6	by	4	27	6	6	
"	8	by	4	37	6	5	
1 Light	8	by	6	45			
Frames,	10	by	6	55			
"	12	by	6	60			
"	16	by	6	75			
2 Light	20	by	6	95			
"	24	by	6	115			

PORTABLE BUILDINGS.

Soundly constructed of good strong material. The sides and ends are covered with tongued, grooved, and beaded boards, on strong framing; the roof of stout boards, and covered with felt. All complete in section.



CRICKET, FOOTBALL TENNIS, AND GOLF PAVILIONS.

15 ft. by 8 ft., £13 10s. 17 ft. by 10 ft., £15 10s. 20 ft. by 12 ft., £18; 26 ft. by 12 ft., £22; 32 ft. by 14 ft., £30.

PORTABLE STABLE, COACH & HARNESS HOUSE.

Suitable for 1 pony and trap, 14 ft. long by 10 ft. wide. Cash price, £9 10s. For 1 horse and trap, 15 ft. long by 12 ft. wide, £12. 2 horses and trap, 20 ft. long by 12 ft. wide, £15 10s.



PORTABLE HUT.



Can be used for poultry, or as cycle houses, workshops, dark rooms, tool and potting sheds, &c., 6 ft. by 4 ft., £1 18s. 6d.; 7 ft. by 5 ft., £2 12s. 6d.; 9 ft. by 6 ft., £3 2s. 6d. If complete with a good stout floor on strong joists, 4s. 6d., 7s., 10s. extra respectively.

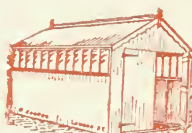
The illustration shows a range of three boxes, manger, and hayrack to each. In sections in readiness for erection. Any size made. Size over all, 21 ft. by 9 ft., 10 ft. high to ridge, and 7 ft. 6 in. high to eaves.

Span Roof Loose Boxes.



Cash price, £18 10s. £5 15s. See List for numerous other designs.

PORTABLE MOTOR CAR SHEDS.



10 ft. by 8 ft., £6; 12 ft. by 8 ft., £7 10s.; 15 ft. by 10 ft., £9 15s.; 20 ft. by 12 ft., £14 10s.; 30 ft. by 14 ft., £23; 35 ft. by 14 ft., £28. Cash Prices.

THE "COOPER" LAWN MOWER.

The lightest running in the world. For general efficiency cannot be surpassed. 8 in. 1s. 5d.; 10 in. 19s. 6d.; 12 in. 20s. 6d.; 11 in. 21s. 6d. each.

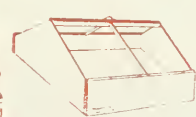


FOLDING FLOWER STAND, 2.9.



RUSTIC HOUSES

from 30s.



PORTABLE HAND LIGHTS.

3s. 6d. each, with glass.



GARDEN SEAT.

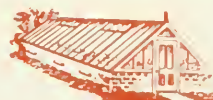
3 ft., 10s. 6d.; 4 ft., 17s. 6d.; 5 ft., 22s. 6d.

HORTICULTURAL TIMBER, &c.—Sash Bars, from 3s. 9d. per 100 ft. Half-glass Doors, sashboards, Floorboards Feather-edged Boards, Unplaned Battens

CALVANIZED CORRUGATED IRON.

Long 3 ft. 1 ft. 5 ft. 6 ft. 7 ft. 8 ft. 9 ft. 10 ft. Each 1- 14 1/8 1 1/2 2 3/4 2 7/8 3- 3/8 All Prime Sheets. Special quotations for quantities.

SPAN-ROOF FORCING HOUSE.



Indispensable to every grower of Cucumbers, Tomatoes, Melons, &c.

Specification—Built for brickwork 3 ft. high, frame work throughout 3 in. by 2 in.; well-seasoned deal, door complete, with lock and brass furniture at one end, roof ventilation according to size, necessary ironwork for opening same, and good 21 oz. glass throughout. House painted one coat, and put on rail at our works. Length 9 ft. wide 12 ft. wide 14 ft. wide 20 ft. 27 10 0 29 0 0 212 0 0 30 ft. 10 0 0 13 0 0 17 0 0 40 ft. 11 0 0 17 0 0 20 0 0 60 ft. 20 0 0 24 0 0 28 10 0 100 ft. 30 5 0 55 0 0 10 0 0

Partitions, with extra door, 9 ft. 30s. 7 12 ft. 35s. 14 ft. 40s. each. Ventilating boxes for side walls, 3s. 9d. each extra. If made with strong base instead of for brickwork, add 20 per cent.

PORTABLE DOG KENNELS.



Soundly made, with door at side for cleaning. Painted with our Patent Rot-Proof Composition. s. d. Terrier's size 10 6 For large Terrier 12 6 Collie & Retriever's size 15 0 St. Bernard's size 25 0

PORTABLE IRON COTTAGE.

Containing two Bed-rooms, 9 ft. by 7 ft. Sitting-room, 13 ft. by 14 ft.; and Kitchen, 13 ft. by 7 ft.



Cash price, £45. Iron building, from £5 15s. See List for numerous other designs.

THE RAPID PROPAGATOR.

Composed of strong casing with hinged glazed top. The bed is formed of a tank, in which a circulation of hot water is kept up by the heater 1 ft. 6 in. by 1 ft. 6 in., 21s.; 2 ft. 6 in. by 1 ft. 10 in., £1 10s.; 1 ft. by 2 ft., £2 10s.; 1 ft. by 1 ft., £1 10s.



CALVANIZED PEA GUARDS.



For protecting seed and young plants from birds, &c. 1 ft. long, 2 cuds to each dozen. Cash price 2s. 3d. per doz., 25s. per gross.

STRONG GARDEN BARROWS.

Strongly made from well-seasoned timbers, and light to handle. With wooden wheels, painted 12 in. sides. Cash price, 16s. 6d. Shifting top, 7s. 6d. extra



ZINC HAND FRAME.

Made of strong corrugated zinc, with 21 oz. glass, cut to size. Prices—12 in., 4s. 3d.; 14 in., 5s. 3d.; 16 in., 6s. 9d.; 18 in., 8s.; 20 in., 9s.; 22 in., 10s.; 24 in., 11s.



THE "FAVOURITE" POULTRY HOUSE.



Made in sections, simply screwed together. Complete with door in the back and key, and window at end with flap at back for access to nest boxes, perch ladder, nest box, &c. A raised floor about 2 ft. from ground forms a dry run underneath nest, 3 ft. by 2 ft. 6 in., 17s. 6d.; 1 ft. by 3 ft. 24s. 5 ft. by 4 ft., 27s. 6d.; 6 ft. by 4 ft., 32s. 7 ft. by 5 ft., 40s.; 8 ft. by 6 ft., 47s. 6d. Everything for the Poultry-keeper supplied.

CHAIRS, strong, used once only, suitable for Mission Halls, Concert rooms, &c. 1s. 4d. each. 15s. doz. £5 15s. 8d. 100 Ex Works

Estimates for every description of Horticultural, Agricultural, or Exhibition Wood or Iron Buildings, Heating Apparatus, Poultry Appliances, &c., Free. NEW CATALOGUE, Illustrated, POST FREE. Every description of Buildings we manufacture on Show.

Dublin Wholesale Markets.

THE past month has found a diminishing supply of produce from home sources, and that generally of poor quality. The inclemency of the weather, and perhaps the Lenten season, may have influenced the markets.

Amongst fruit, Irish apples have been scarce, and the few offered should have brought higher prices. Growers should pay a little more attention to the cultivation and handling of their fruit if they wish to attain success.

Spring flowers are now arriving in larger quantities, the bulk of them consisting of Tulips, Narcissi, Anemones and Violets, all of which met with a ready sale.

Vegetables are selling a little better than during the previous month: but owing to the manner in which most of them are marketed their full value cannot be obtained. York cabbages were scarce and the quality below the average, but it was surprising to note that Savoy's of much better quality brought less money. The season for celery is over, but seakale and asparagus are taking its place. Rhubarb, spinach, lettuce and pot herbs were in good demand.

The following is a price list for the month:—

VEGETABLES.		From	To
		s. d.	s. d.
Artichokes	per float	1 6	1 8
Beet	"	0 8	0 10
Broccoli	per basket	2 3	3 0
Cabbage (York)	per load	10 6	16 0
" (Savoy)	"	8 0	12 0
Carrots	per doz. bunches	0 8	0 10
Celery	per bunch	1 0	1 1
Lettuce	per dozen	1 1	
Onions	per bag	2 0	2 6
Parsley	per tray	0 8	0 10
Parsnips	per cwt.	2 6	3 0
Rhubarb	per doz. bunches	3 0	3 6
Seakale	per dozen	1 1	1 6
Swedes	per cwt.	0 10	1 0
Turnips (Orange Jelly)	per bunch	0 3	0 1
Thyme	per doz. bunches	2 0	3 0

FRUIT.

		From	To
		s. d.	s. d.
Apples—			
(Bramley's)	per barrel	13 0	16 0
	Small	8 0	9 6
Mixed lots	per float	1 6	1 10

FLOWERS.

Anemones	per doz. bunches	1 1	1 6
Arum Lilies	per dozen	3 6	4 0
Carnations	"	3 0	—
Daffodils	per doz. bunches	3 0	3 6
Freesias	per dozen	2 0	2 6
Lilium Harrisii	"	3 0	1 0
Roses	"	1 0	
Tulips	"	1 0	1 1
Violets	per doz. bunches	1 0	1 6
Wallflowers	per dozen	0 3	0 5
Shamrock	per tray	0 1	0 6

T. B.

IRISH SEED POTATOES

Send for list of varieties offered by
CAPT. BARRETT-HAMILTON
 The Largest Grower in the South of Ireland

OTHER SPECIALITIES—

CABBAGE PLANTS . . .
DAFFODIL and NARCISSI BULBS

KILMANOCK, CAMPILE, via WATERFORD

PLANT NOW . A BEAUTIFUL GIBSON BORDER

FOR SUCCESSIONAL MASSES OF BLOOM.



MAY & JUNE
FLOWERING

JUNE & JULY
FLOWERING

JULY & AUGUST
FLOWERING

AUGUST & SEPTEMBER
FLOWERING

SEPT. & OCT
FLOWERING

This border is 56 ft. long, 8 ft. wide, and contains a total number of 240 plants, named, numbered, and delivered carriage paid for **£5 10s.** Full particulars and Catalogues of Hardy Plants, Fruit Trees and Yorkshire grown Roses sent free. Larger or smaller borders arranged and supplied at proportionate cost.

GIBSON & CO. (DEPT. A) LEEMING BAR, BEDALE

Miscellaneous Section.

THE POPULARITY OF XL ALL SPECIALITIES increases every year. All gardeners proclaim that nothing equals these celebrated preparations.

XL ALL NICOTINE VAPORISING COMPOUND, the gardeners' favourite Fumigant, both Liquid and Cake.

XL ALL NICOTINE INSECTICIDE WASH for Syringing, Dipping, and Dressing Fruit Trees and Plants, Mealy Bug, Scale, &c., cannot exist where this is used.

XL ALL INSECTICIDE WASH B (sine Nicotine), best non-poisonous Wash on the Market.

Other Preparations of great renown are **RICHARDS' GREEN SUNSHADE POWDER** for glass, **XL ALL GRUB KILLER** for digging into the soil, kills all insects which injure roots. Don't forget to ask your Nurseryman or Seedsman for my small pink list. **G. H. RICHARDS**, Manufacturer, 234 Borough High Street, London, S.E.

LANDSCAPE GARDENING

DESIGNING, Laying out and Planting of New and Renovating of Old Gardens. The Making and Planting of Rock Gardens, Rockeries, Water and Bog Gardens, and Pergolas a Speciality.

Plans Prepared. Estimates Free.

RICHARD C. McM. SMYTH, F.R.H.S.
Mount Henry Dalkey, Co. Dublin

BIRDS SCARED.—Rotless Tanned Netting. Small mesh; very superior: as supplied by us to the Royal Gardens. Satisfaction or cash refunded. 100 x 1 yard, 3/9; 2 yards, 7/6; 3 yards, 11/3; 4 yds., 15/-; 50 x 6 yds., 11/3; 25 x 8 yards, 7/6; carriage paid. Any length and width supplied. **POTTER BROS.** (Dept. T.), Shrewsbury. Estd. 58 years.

LAWN MOWERS.—Nothing to equal them, only 12/9. Garden Rollers, 24/-; Seats, 8/6; Barrows, 14/6; Water Barrows, 20 gallon, 25/6. Get our free list and save money. **POTTER BROS.** (Dept. T.), Shrewsbury.

TENNIS COURT NETTING.—Rotless; Superior. Strong Tarred Top and Bottom Lines. 25 x 2 yds., 6/-; 3 yds., 7/-; 4 yds., 8/-. Tents, 22/-. Army Bell Tents, all complete, 37/6. **POTTER BROS.** (Dept. T.), Shrewsbury.

IF YOU HAVE A GLASS ROOF THAT LEAKS, a Conservatory to repair, or any kind of glazing work to be done, **CARSON'S PLASTINE** will save money, time, worry and annoyance consequent on the use of ordinary putty, which cracks, crumbles, and decays. It saves the expense of constant renewals. Carson's Wood Preservative in green and brown, for Palings, Trellis Work, &c. The best paint for Greenhouses is "Vitrolite." Write for Catalogue. **CARSON'S**, 22 Bachelor's Walk, Dublin.

AUTO-SHREDS IS CERTAIN DEATH to Leaf-mining Maggots, Mealy Bug and all Pests infesting plants under glass, &c. Simple to use, no apparatus required. In Boxes to Fumigate 1,000 cubic feet, 6d.; 10,000 cubic feet, 38. 6d. each. Obtained of Seedsman and Florists; if unobtainable apply direct—

WM. DARLINGTON & SONS,
Wholesale Horticultural Sundriesmen,
HACKNEY, LONDON, N.E.

Trade Terms and Catalogue of Sundries upon receipt of business card



DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION FOR IRELAND.

TRAINING IN—

Agriculture . Creamery Management
Horticulture . Forestry .

Particulars of the courses of training for farmers' sons, to be provided by the Department during the year 1913-14, at the following institutions, viz. :—

The Royal College of Science, Dublin
The Albert Agricultural College, Glasnevin, Dublin
The Agricultural Station, Athenry, Co. Galway
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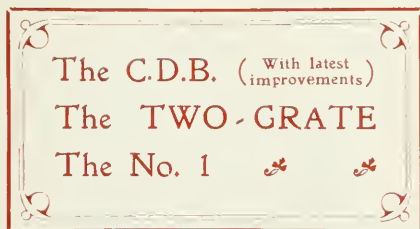
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County Clare Horticultural Society Spring Show.

THE annual Spring Show of the Clare Horticultural Society was held on Thursday, April 3rd, at the Courthouse, Ennis.

As usual at the spring show the Daffodil classes filled a large space in the catalogue, and these exhibits taken as a whole were very meritorious indeed, when one considers the bad season and the heavy rains.

Mrs. Wilson Lynch had a particularly fine display of Daffodils, and her Glory of Leiden, shown in Class 6, was perhaps the finest Daffodil in the show. Major Hickman and Rev. R. Scott, too, had some fine exhibits. Dr. Macnamara had a very neat collection. There were some splendid exhibits, too, from Lady Inchiquin and Mrs. H. V. Macnamara which were much admired. There were some beautiful stands sent in for exhibition, but not for competition, from various firms. Messrs. J. B. Hartland & Sons, Cork, had a beautiful stand in the front hall of Daffodils and Orchids, &c., and a charming collection of Alpines, which were much admired. Messrs. Ramsay, of the Royal Nurseries, Dublin, had a fine stand, conspicuous in which were a magnificent floral cross and wreaths. The Lissadell Bulb Farm sent a grand collection of Daffodil blooms, in a nice clean order, but owing to a regrettable change in the staff they were unattended, nevertheless, the stand was a source of great interest throughout the afternoon.

The judges were—For Daffodils, Mr. J. Tresseder, of Hartlands; and for general exhibits, Mr. Wm. Early (Glenstal) and Mr. M. Barry (Black-

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Quart 3/6 $\frac{1}{2}$ -gal. 5/-
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THE CHEAPEST INSECTICIDE OF THE DAY

"NIQUAS"

(NON-POISONOUS)

IMPROVED

A Concentrated Extract of Quassia, combined with other valuable ingredients, forming a cheap, safe, and effective Insecticide for syringing and dipping. It destroys all insect Pests infesting Trees and Plants, whilst no possible injury to vegetation can result from its use.

It can be applied with syringe or pump, or used for dipping.

PRICES Half-pint, 1/-; pint, 1/6; quart, 2/6; half-gallon, 4/-
gallon, 7/6; five gallons, 25/-; ten gallons, 40/-
1 gallon sufficient for 80 gallons of water.

STANDEN'S MANURE

(Established over 35 Years)

Exceeds all others in General Fertilising Properties and Staying Powers

Analysis on Application

Sold in Tins, 1-, 2/6, 5/6 each: and in Kegs, well secured, to prevent loss through exposure, 28 lbs., 7/6; 56 lbs., 12/6; 112 lbs., 20/-

CORRY'S SPECIAL

Chrysanthemum Manure

Sold in Tins, 1-, 2/6, 5/6, and Bags, $\frac{1}{2}$ cwt., 10/6; $\frac{1}{2}$ cwt., 18/-;
1 cwt., 32/-

For Fumigating in Greenhouses.

"LETHORION"

Improved Metal Cones

Registered No. 62,597

To destroy Insect Pests. The Candle attached to each Cone only needs lighting, and there is no further trouble. They are most efficacious.

No. 1, for small frames of 100 to 600 cubic feet, 6d. each: Cone No. 2, 8d. each, 1,000 to 1,200 cubic feet; No. 3, 1/- each, 2,000 to 2,500 cubic feet,

Fowler's Lawn Sand

This preparation is for destroying Daisies and other weeds on lawns, and at the same time stimulating the growth of the grass. If one tin is tried as a sample, its value will be at once appreciated. Sales are largely increasing.

Tins, 1/-, 2/6, and 5/- each; Kegs, $\frac{1}{2}$ cwt., 8/6; $\frac{1}{2}$ cwt., 16/-;
1 cwt., 30/-

ELLIOTT'S

'Summer Cloud' Shading

Registered Trade Mark No. 14,629.

(The only genuine original and improved article)

For Greenhouses. A pleasant green shade is given to the glass.

In packets, 1/- for 100 feet of glass, and 2/6 each for 300 feet.

Sole Manufacturers:

CORRY & CO., Ltd
LONDON

SOLD BY ALL NURSERYMEN AND SEEDSMEN

water, and the decisions gave complete satisfaction.

LIST OF AWARDS

Section I.—Class 1.—Best 30 vases of Daffodils, named, to be staged with Daffodil foliage only. First prize, Major S. C. Hickman; second, Lord Inchiquin; third, Rev. R. Scott.

Class 2.—Twelve distinct varieties of Daffodils or Narcissi, three blooms of each. Prizes presented by Robert Sydenham, Ltd. First, Major Hickman; second, Rev. R. Scott; third, Dr. G. F. Macnamara.

Best six vases of Polyanthus, or Poetaz Narcissi (not less than three varieties). First, Rev. R. Scott; second, Major Hickman. Prizes presented by Lady Inchiquin.

Best stand of six varieties of single Daffodils, named. First, Major Hickman; second, Lord Inchiquin; third, Mr. Wilson Lynch.

Best stand of six double Daffodils, named (not less than three distinct kinds). First, Mr. Wilson Lynch; second, Major Hickman; third, Mrs. A. Knox.

Best stand of twelve varieties of Daffodils, correctly named, of which at least six varieties must belong to the Magni Coronati group (Trumpet Daffodils), any foliage. Tie for first place between Rev. R. Scott and Major Hickman; third, Mrs. R. Maunsell.

Section II.—Best six bunches of St. Brigid Anemones, not less than three distinct colours—First, Mrs. Stanistreet.

Best six bunches of single Primroses, not more than two bunches of same colour—First, Rev. R. Scott; 2nd, Mrs. H. V. Macnamara; 3rd, Mrs. A. Knox.

Best six bunches of double Primroses, not more than two bunches of same colour—First, Mrs. Loftus Studdert.

Best six bunches of Polyanthus, not less than three distinct varieties—First, Mrs. H. V. Macnamara; 2nd, Mrs. Loftus Studdert; 3rd, Rev. R. Scott.

Best six bunches of Violets named, not less than three varieties—First, Lord Inchiquin; 2nd, Mrs. Wilson-Lynch; 3rd, Mrs. Stanistreet.

Best six bunches of Wallflowers, not less than three distinct colours—First, Rev. R. Scott; 2nd, Mrs. H. V. Macnamara.

Best 25 vases of hardy spring flowers, not more than two bunches of the same kind—First, Mrs. Wilson-Lynch; 2nd, Mrs. A. Knox. Prizes presented by Lady Inchiquin.

Best twelve vases of hardy spring flowers (confined to those who have no glass or professional assistance)—First, Mrs. Stanistreet. Prizes presented by Mrs. R. Vere O'Brien, Ballyalla.

Best twelve vases of flowering shrubs—First, Mrs. Wilson-Lynch; 2nd, Miss Henn. Prizes presented by Mr. R. J. Stapoole, D.L.

Best collection of greenhouse flowers (cut blooms)—First, Mrs. H. V. Macnamara.

Best six vases of Cinerarias, large flowering—First, Lord Inchiquin; 2nd, Mrs. H. V. Macnamara.

Best six vases of Cinerarias (stellata)—First, Mrs. H. V. Macnamara; 2nd, Lord Inchiquin.

Best six vases of Tulips, three flowers to each vase—First, Mrs. H. V. Macnamara.

Best six spikes of Hyacinths, not more than two of same colour—First, Rev. R. Scott; 2nd, Mrs. H. Bill.

Best arranged vase of cut flowers—First, Miss Irene Scott; 2nd, Miss E. Scott; 3rd, Mrs. G. M. Macnamara.

Vegetables and Fruit at the R.H.S.I. Show, Dublin.

There is room for much improvement both in the number and the quality of the exhibits of fruit and vegetables at the Spring Show, and I consider it would be well for the Council to increase the value of the prizes in the vegetable classes to encourage more competition.

French Beans were good, first prize going to the Marquis of Ormonde; second to N. Hone, Esq.

Broccoli was very good, Alderman Bewley being first and Mrs. Jameson second.

Potatoes, except for the first prize dish of Alderman Bewley's, were poor.

Cabbage was fairly good, Mrs. Meade Coffey being first and Mr. Sodon second.

Lettuce, excepting the first prize four of Alderman Bewley's, was very poor.

Cucumbers were fair; Marquis of Ormonde was first and Viscount De Vescei second. The third prize pair was much below exhibition standard.

There were two fair exhibits in the collection of six, N. Hone, Esq., being first, his containing good French Beans, very good leeks, very good cauliflowers, and fair potatoes (well staged); Viscount De Vescei being second, his containing very good mushrooms and cucumbers and potatoes.

Cooking Apples were fairly well represented, first going to E. D'Olier, Esq., with Newton Wonder, and second to R. T. Harris, Esq., for Lord Derby.

Desserts were poor; Captain Riall was first with Cox's Orange. Two exhibits were dis-

DEATH TO ALL INSECT PESTS

AT THIS TIME OF THE YEAR
Glasshouses are infested with
Green Fly, Black Fly, Spider and
other injurious pests, which sap
the vigour from the plants and
prevent them thriving.

Rid Your Plants of Pests

For this purpose nothing can
be better, more economical, or
safer than

McDOUGALL'S FUMERS AND TOBACCO SHEETS

NO SPIRIT REQUIRED. NO LIQUID POISON.

Efficiency and strength guaranteed by the oldest
established Manufacturers of Horticultural
Specialities.

SOLD BY NURSERYMEN, SEEDSMEN & FLORISTS
THROUGHOUT THE WORLD.

qualified for containing Newton Wonder and Annie Elizabeth in this class.

Pears were very good: Alderman Bewley was first with Uvedale's de St. Germain—the five fruits weighing 6 lbs. 10 oz., the heaviest fruit being 1 lb. 10 oz. Viscount De Vesce was second with fruit almost as good of the same variety.

There were two entries for strawberries, and nice clean fruit were staged in each. Viscount De Vesce was first and Alderman Bewley second. It would be well for the exhibitors in this class in future to place the correct number of fruits for a dish on the plate, as one of the dishes contained more and the other less than the correct number.

W. I.

Show Fixtures for 1913

THIS Schedule is designed to assist Societies in selecting dates for their Shows, by indicating what arrangements have already been made. Secretaries will greatly oblige by sending the earliest possible intimation of their fixtures, and of any change which takes place in their arrangements.

May 28th, 30th—Belfast Show.
June 19th—Kilkenny Summer Show.
„ 25th, 26th—Mallow Show.
„ 30th—Newry Show.
July 8th, 9th—Cork Summer Show

July 12th—Malahide, Fingal Horticultural Society.
„ 15th—Dundrum, Co. Dublin.
„ 18th—Stillorgan and Foxrock.
„ 19th—Lucan, Saggart and Clondalkin.
„ 25th—Irish Rose and Floral, Belfast.
„ 26th—Terenure and District.
„ 30th—Kingstown Horticultural Show.
„ 30th—Co. Clare Horticultural Society, Summer Show at Ennis.
„ 30th—North Kildare and District Horticultural Society at Straffan House, Straffan.
„ 31st—Fethard Flower Show.
Aug. 5th—Navan Show.
„ 8th—Portunna Show.
„ 13th—Ballinasloe, Co. Galway, Horticultural Society.
„ 14th—Banbridge Horticultural Society.
„ 14th—Killarney.
„ 15th—Naas District.
„ 21st, 22nd—Larne Flower Show.
„ 26th—R.H.S., Dublin Autumn Show.
September 4th—County Kilkenny Horticultural Show.
„ 4th—Newtownards Horticultural Society.
Oct. 22nd, 23rd—R.H.S., Dublin Winter Show.
November 1st—Co. Clare Fruit and Farm Produce Show.
„ 11th, 12th—Ulster Horticultural Society Chrysanthemum Show.

Smith's "Perfect" Patent Powder

MARVELLOUS INVENTION

TESTIMONY

ENNISCORTHY.

The Powder Weed Killer
I got from you last month
is the best I ever used.

GLENELLEN, MILTOWN.

Your Weed Killer is the
only one I ever tried that is
any use. Yours never fails.

—L. CREAGHE CREAGHE-
HOWARD

WEED KILLER

MOST EFFECTIVE

Nothing like it ever seen before. Soluble in Cold Water.

All Tins Free. No Return Empties.

4 Tins when mixed with water will cover about 100 square yards.

1 Tin, sufficient to make	25 gallons	£0	1	9	
4 Tins	100	0	6	6	
8 Tins	200	0	12	6	Box 3d. extra
12 Tins	300	0	17	0	4d. ..
20 Tins	500	1	7	0	6d. ..
40 Tins	1,000	2	8	0	1s. ..

Carriage Paid on 8 Tins and upwards to Stations in Ireland.

SMITH'S LIQUID WEED KILLER

One gallon to make 25 gallons for use

1 gallon	1	9	6	gallons	9	6	16	gallons	1	2	0
2 ..	3	6	8	..	12	6	18	..	1	5	0
3 ..	5	0	10	..	14	0	20	..	1	7	0
4 ..	6	6	12	..	17	0	40	..	2	8	0
5 ..	8	0									

Carriage Paid on 8 gallons and upwards.

4 Gallons when mixed will cover an area of about 400 square yards.

	Double Strength (1 to 50)				PRICES -					
1 gallon	3	6	5	gallons	13	6	16	gallons	38	0
2 ..	6	6	6	..	16	0	20	..	46	0
3 ..	9	3	8	..	21	0	40	..	88	0
4 ..	11	6	10	..	25	0				

Carriage Paid on 4 gallons and upwards. Drums and Casks charged extra, but full price allowed when returned in good conditions carriage paid

IRISH AGENT—

NOTICE. These Preparations are Poisonous. Sole Proprietors, MARK SMITH, Ltd.

D. M. WATSON, M.P.S., Horticultural Chemist 61 South Great George's Street DUBLIN

Telephone, 1971

Gardeners and Foresters under the Department of Agriculture.

ATTENTION is directed to the announcement in our advertising columns relative to courses of training in horticulture and forestry to be held during the year 1913-14 under the Department of Agriculture.

The course in fruit-growing and general gardening at the Albert College, Glasnevin, affords an excellent opportunity for men who have had some years' experience of garden work to acquire a thorough knowledge of the subject. Students are allowed 11s. to 16s. per week in addition to furnished lodging while in training. Several gardeners who have taken out this course have been able to secure employment as horticultural instructors under the Department's schemes.

Applicants for apprenticeships in forestry are not expected to have had any special knowledge of forestry, but preference is given to those who have had experience of work in woods. Apprentices are allowed 11s. per week with furnished lodging during the first year of their training.

The Department also offers valuable scholarships in horticulture and forestry tenable at the Royal College of Science, Dublin. The scholarships are renewable for four years to enable the holders to obtain, free of cost, the most advanced technical and scientific training.

Primula Forrestii.

CAN any reader offer an explanation of the following? *Primula Forrestii* seems to have a curious habit of dying off. From several parts of the country we hear of good batches of strong plants having passed the winter safely, then suddenly a third to one half of the plants droop and die, apparently without being attacked by a fungus.

George Forrest found this *Primula* in 1906 on the Lichiang Range, at an altitude of 9,000 to 11,000 feet, and he gives the following account, of how the plant grows naturally, in the "Notes from the Royal Botanic Gardens, Edinburgh":—

"*P. Forrestii*, of the section *Callianthe*, is a curious as well as a beautiful species, and a lover of dry, stony situations. The flowers are large and numerous, of a rich deep shade of orange, and fragrant. The foliage is densely coated with glandular hairs, and, in the fresh state, has a peculiar, but not unpleasant, aromatic odour. The plant is specially adapted to the situation in which it is commonly found—i.e., the crevices of dry, shady limestone cliffs, in having a long, intensely tough, woody root-stock of 2 to 3 feet in length. The base of this is very tapered, generally only a few inches being enclosed in the crevices of the rocks. From this point the plant is pendulous for almost the full length of the remainder of the root-stock, a few inches of the growing apex being turned out and upwards. The root-stock for two-thirds of its length is covered with the

induvium of previous year's foliage, which, at the apex, form a dense matted mass, with the fresh foliage and flowers arising from the centre. Judging from the length of the rootstocks of specimens seen growing, allowing two whorls of leaves for one year's growth, a liberal estimate, some plants must reach the age of 50 to 100 years. Another feature which pointed to great age in the species was, the cliffs behind some of the larger specimens were scored and worn to the depth of fully an inch by the motion of the plants in the wind.

Catalogues.

MESSRS. J. CUEAL & SONS, The Nurseries, Crawley, send a catalogue of Dahlias, Spring Flowers, and Bedding Plants. Their collection of Dahlias is an extremely good one, and numerous prizes and medals gained in competition at the best shows, show how well the plants are grown. The present day Cactus Dahlia, with flowers held well above the foliage on sturdy erect stems; is an extremely beautiful flower, useful for cutting, for borders, or for large beds. Novelties for the present and for last year are followed by a very full list of the older sorts. For small gardens and for beds the new Pompon Cactus Dahlias will be found of great use. Both soft pleasing colours and brilliancy are found in the single-flowered and the Peony-flowered Dahlias; they are most useful for cut flowers and decorative purposes. The same may be said of the new Collarette Dahlias, while in the Mignon Dahlias will be found plants only about 18 inches, suitable for beds and borders. At the end of the catalogue will be found lists of early-flowering Chrysanthemums, Violas and Bedding Plants generally.

Weedy Walks.

A LARGE user of a certain brand of weed killer jokingly suggested to the Irish agent recently that the particular preparation in question might be made weaker, for he found that after a few years regular use the weeds had become much less vigorous, and he looks forward to being able to do without weed killer almost altogether in a few more years. The preparation referred to was Smith's "Perfect" Weed Killer, but the maker has no intention of adopting the suggestion to reduce the strength of his weed killer, which has been so satisfactory in results wherever used. It is supplied either in powder or liquid—both being equally effective. The advantage of the powder form is that it is supplied in free tins, and so saves carriage back on empty drums and casks. Smith's "Perfect" Weed Killer is now known and used all over Ireland, and continues to increase in popularity on account of its uniformly good results. Mr. D. M. Watson, horticultural chemist, 61 South Great George's Street, Dublin, is the Irish agent for Smith's Weed Killer, Smith's Insecticides, Smith's Worm Killer, Smith's Summer Shading, Smith's Lawn Sand, &c. Weed Killer prices will be found on page xiii of this issue, and particulars of all Smith's goods can be had from the above address of the Irish agent.

New Books.

Vegetable Growing made Easy. By OWEN THOMAS and GEORGE WYTHES, V.M.H. Published by the proprietors of *Country Life*, 20 Tavistock Street, Covent Garden, London. Price, 1s. net.

This addition to the library of the gardener is an admirable little work on vegetable growing. Certainly the authors have stated in clear and concise terms the conditions that make for success in the cultivation of vegetables. The formation of a kitchen garden, the rotation of crops, popular and rare vegetables: are the subjects of most interesting chapters. Amateurs especially will fully appreciate the Time Table for Beginners, which forms portion of the last chapter of the cultural portion. Here is shown the date of sowing and the maturing of the crop, one of the most valuable details to the kitchen gardener. There is, of course, a woman in the case. In the second part the lady tells us how to cook the vegetables, a lesson indeed that is sadly needed. This portion deals in detail with the cooking of vegetables, French dishes and recipes, and dried vegetables. Altogether the book is to be recommended, being plain and practical, having numerous illustrations, and written by the leading experts of the day. J. T.

The Practical School Garden, Note, and Record Book. By JOHN WEATHERS. Longmans, Green & Co. Price, 6d.

THIS notebook has been adapted for use in school gardens, horticultural colleges, &c. Its intention is to be a guide and reference to the scholar. By using it the student will be able to take concise and well arranged notes upon garden subjects.

Show Quips.

It was, of course, simply impossible there would be any but the tag, rag, and bobtail of the Narcissi at the Dublin Show, but, thanks to our wretched Irish climate, it was the impossible that happened, as it has done before, and will likely do again. The Daffs were there, and to all appearance in their prime, but what gardener could or would forego his privilege of growling? "Never saw such a season, my King Alfred went to the devil on me," and, "Madame de Graaff is not yet out." But, and be it noted, the complaisance of the craft where the shifting up of specimens after staging was necessitated, or some other "figary" of the powers that be, came into play, which across Channel "would provoke a saint," and does, including some that are not, was invariably received with a courtesy that English exhibitors generally, and English gardeners in particular, would do well to copy. But, by the same token, why will our confreres of the craft persist (some of them) in showing Roses in such dreadfully dirty pots? Previous years, we are aware, it was for "want of time."

Is it, we wonder, a similar shortage which prevented a few minutes scrubbing of these venerable relics of the potter's art which annually get dirtier and drabbier in the wearing of the green! Will the growers of that superb Mignonette, invariably found at our Dublin Shows, kindly note that both the red and golden varieties are equally amenable for Show purposes, and would add a charm by variety! We are aware that the big specimen plant, stove or greenhouse, the pride and glory of the gardeners of auld lang syne, is as extinct as the Dodo, but where were the little 'uns—Spiræas, small Azaleas, and what not? Are we doomed to lose them too? The two little lots of plants suitable

Little's Weed Destroyers



**KILLS ALL
WEEDS, - -
MOSSES, &c.,**

On Carriage Drives,
Gravel Paths.

Double the strength of
most Weed Killers.

1 gallon to 50 gallons
water.

1 gallon Drum, 2/6 ... Drum Free.
40 ,, Cask, 2/- per gal., Cask Free.

LITTLE'S WEEDOL
Powder Weed Killer

Per 1/9 Tin,
To make 25 Gallons.

Saves Trouble and
Expense of Returning
Packages.



Morris Little & Son, Ltd., Doncaster

for table decoration appeared to us so good that it was like unto gilding refined gold or painting the Lily to wrap the pots in those horrid little, crinkly, paper adornments (?). If we must have these elegant abominations let us have a class for them by themselves, and not let them be spoiled by the plants. It was a *Schizanthus* Show, whatever shortage was noticeable in plants in other directions, and then there was the glory of the *Gloxinias*, on the first day : on the second day there were at least three lots of the Ichabod strain, whose glory had departed. Why? Why this floral flopping in which their heads were bowed with woe? Is it that the good old practice of hardening tender things off a bit for a few days in a cooler house is overlooked? Those who grow Cucumbers for show would do well to invest in a couple of Cucumber glasses. There was more than one enquiry as to the variety of Potato which was worthily placed first, and the exhibitor need not have been ashamed to have attached the name to them. QUIZ.

Note.

OMPHALODES CAPPADOCICA.

At the Royal Horticultural Society of England this plant received an Award of Merit on March 18th of this year. The leaves and general appearance suggest one of the small *Mertensias*, the flowers, however, are not tubular, as in *Mertensia*, but open or rotate.

The seed is another distinguishing character, its curious shape having suggested the name of *Omphalodes* or Navelwort. If fertilised each flower usually produces four seeds, and these seeds have an inflexed margin which gives to them a cup-like shape, somewhat resembling the navel. *Omphalodes cappadocica* is said to grow wild in shady places in Cappadocia, and Abchasia, &c.; the Index Kewensis refers the plant to *O. cornifolia*.

When grown naturally in the open, the flowers are produced in April, on leafy, erect stems 6 to 8 inches high. Round purplish buds open into flowers of the richest blue imaginable, each half an inch across, with a white eye. The leaves are heart-shaped, narrowing to a point with sunken veins, and covered with fine silky hairs.

Dublin Wholesale Markets.

THE markets for the past month were well supplied with flowers and vegetables. The latter were selling a little better than they did the previous month : but the manner in which a large percentage of the root crops are marketed precludes them from realising their full value.

People who are marketing produce should keep before their mind the fact that grading, packing

and cleanliness of stuff have a great deal to do with the profits realised.

Spring cabbages were in good demand, and the greater part were disposed of at a premium. Large supplies of home-grown rhubarb were conspicuous, and good prices were obtained for selected lots.

Irish apples were scarce, the supply being limited to a few barrels and two dozen boxes of Branley's Seedling ; but it was pleasing to note the high prices obtained for them. Cross-channel fruits are still plentiful, and prices remain unchanged.

The flower section was well supplied with spring flowers, and, with few exceptions, the supplies did not exceed the demand. Some choice plants in pots were also offered for sale, and were easily disposed of.

The following is a price list for the month :—

PRICE LIST—VEGETABLES.		From		To	
		s.	d.	s.	d.
Artichokes	per float	1	1	1	9
Beet	per bunch	0	3	0	5
Broccoli	per flasket	2	0	3	6
Cabbage (York)	per load	11	0	20	0
" (Savoy)	"	8	0	10	6
Carrots	per doz. bunches	0	7	0	10
Celery	per bunch	1	0	1	3
Lettuce	per dozen	0	4	0	6
Onions	per bag	2	0	2	6
Parsley	per tray	0	6	0	8
Parsnips	per bag	2	0	2	3
Rhubarb	per doz. bunches	2	0	3	6
Radishes	per dozen	0	2	0	4
Seakale	per dozen	1	1	1	8
Spinach	per tray	0	6	0	8
Swedes	per cwt.	1	0	1	1
Thyme	per doz. bunches	2	0	2	1
Turnips (White)	per bunch	0	2		
" (Orange)	"	0	3	0	4

APPLES.

Bramley's Seedling	per barrel	18	0	24	0
Bramley's Selected	per dozen	1	8	2	6
Newtown Pippins	per case	9	0	9	6

FLOWERS.

Anemones	per doz. bunches	1	3		
Arabis albidia	per bunch	0	1	0	6
Arum Lilies	per dozen	3	0	3	6
Carnations	"	2	0	3	0
Narcissi	per doz. bunches	1	1	1	8
Roses (Maréchal Niel)	per dozen	2	0	2	6
Tulips	per doz. bunches	0	8	1	0
Violets	"	1	1	1	8
Wallflowers	per bunch	0	3	0	5

T. B.

KINGSTOWN FLOWER SHOW

WEDNESDAY, 30th JULY, 1913

Schedule of Prizes, &c., from The Secretary, Kingstown
Horticultural Society, Technical School, Kingstown

Miscellaneous Section.

THE POPULARITY OF XL ALL SPECIALITIES increases every year. All gardeners proclaim that nothing equals these celebrated preparations.

XL ALL NICOTINE VAPORISING COMPOUND, the gardeners' favourite Fumigant, both Liquid and Cake.

XL ALL NICOTINE INSECTICIDE WASH for Syringing, Dipping, and Dressing Fruit Trees and Plants, Mealy Bug, Scale, &c., cannot exist where this is used.

XL ALL INSECTICIDE WASH B (sine Nicotine), best non-poisonous Wash on the Market.

Other Preparations of great renown are **RICHARDS' GREEN SUNSHADE POWDER** for glass, **XL ALL GRUB KILLER** for digging into the soil, kills all insects which injure roots. Don't forget to ask your Nurseryman or Seedsman for my small pink list. **G. H. RICHARDS**, Manufacturer, 234 Borough High Street, London, S.E.

LANDSCAPE GARDENING

DESIGNING, Laying out and Planting of New and Renovating of Old Gardens. The Making and Planting of Rock Gardens, Rockeries, Water and Bog Gardens, and Pergolas a Speciality.

Plans Prepared. Estimates Free.

RICHARD C. McM. SMYTH, F.R.H.S.
Mount Henry Dalkey, Co. Dublin

BIRDS SCARED.—Rotless Tanned Netting. Small mesh; very superior: as supplied by us to the Royal Gardens. Satisfaction or cash refunded. 100 × 1 yard, 3/9; 2 yards, 7/6; 3 yards, 11/3; 4 yds., 15/-; 50 × 6 yds., 11/3; 25 × 8 yards, 7/6; carriage paid. Any length and width supplied. **POTTER BROS.** (Dept. T.), Shrewsbury. Estd. 58 years.

LAWN MOWERS.—Nothing to equal them, only 12/9. Garden Rollers, 24/-; Seats, 8/6; Barrows, 14/6; Water Barrows, 20 gallon, 25/6. (Get our free list and save money. **POTTER BROS.** (Dept. T.), Shrewsbury.

TENNIS COURT NETTING.—Rotless; Superior. Strong Tarred Top and Bottom Lines. 25 × 2 yds., 6/-; 3 yds., 7/-; 4 yds., 8/- Tents, 22/-. Army Bell Tents, all complete, 37/6. All kinds of Tents supplied. Lists free. **POTTER BROS.** (Dept. T.), Shrewsbury.

IF YOU HAVE A GLASS ROOF THAT LEAKS, a Conservatory to repair, or any kind of glazing work to be done, **CARSON'S PLASTINE** will save money, time, worry and annoyance consequent on the use of ordinary putty, which cracks, crumbles, and decays. It saves the expense of constant renewals. Carson's Wood Preservative in green and brown, for Palings, Trellis Work, &c. The best paint for Greenhouses is "Vitrolite." Write for Catalogue. **CARSON'S**, 22 Bachelor's Walk, Dublin.

AUTO-SHREDS IS CERTAIN DEATH to Leaf-mining Maggots, Mealy Bug and all Pests infesting plants under glass, &c. Simple to use, no apparatus required. In Boxes to Fumigate 1,000 cubic feet, 6d.; 10,000 cubic feet, 3s. 6d. each. Obtained of Seedsman and Florists; if unobtainable apply direct—

WM. DARLINGTON & SONS,
Wholesale Horticultural Sundriesmen,
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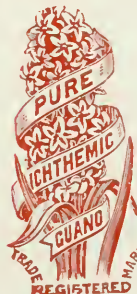
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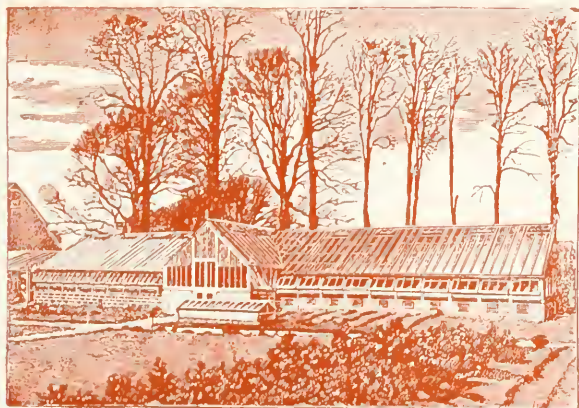
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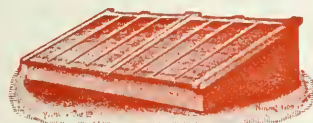
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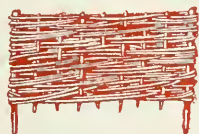
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Beet.

It is generally conceded that beetroot is the cultivated form of the maritime species, *Beta maritima*, L., or a variety of *Beta vulgaris*, L., as well as probably the species itself, under which Linnaeus groups the red, yellow, and pale green sorts. He considers the white or pale beet *Beta Cica*, L. The wild slender-rooted plant grows along the coasts of the Mediterranean to Persia and Babylon, as well as in West India. It is also wild round the coasts of England and Ireland, and from Denmark southwards.

The ancient Greek name was *Tentlon*, and the Latin *Beta*. Pliny says the Greeks distinguished two sorts, the black and white, referring to the dark and pale foliage, as they did not eat the root. "Beet is mostly eaten with lentils and beans, it is prepared also in the same way as cabbage, with mustard more particularly." He adds that "when wine in the vat has been deteriorated by assuming a flavour like that of cabbage, its original flavour is restored, it is said, by plunging beet leaves into it."

In the Middle Ages beet is often mentioned under the names *Beta*, *Bleta*, *Sicla*, *Atriplex agrestis* and *A. domestica*; in French, *Arache blanc*. The juice of the black beet was used on the temples for headache.

Dodoens (1559) figures the white and black beets, adding a third figure, "another kind of black beet," for the sake of the root, which is "thick and large, like the rape, the taste being between that of the turnip and parsnip. It is eaten with vinegar, pepper, oil and salt."

That the beetroot was still little known in 1578 appears from Dodoens' "History of Plants," for he thus writes: "There be two sorts of Beetes,

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GOW'S SLUG DESTROYER And Combined
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28 lbs. 4/6 $\frac{1}{2}$ -cwt. 7/6 1 cwt. 11/6

All Carriage Paid Sample Tins, 6d and 1/-
In Decorated Tins.

ASK YOUR SEEDSMEN AND NURSERYMEN FOR IT.

HUNTER & GOW, Ltd. 42 Thomas St.
LIVERPOOL

THE CHEAPEST INSECTICIDE OF THE DAY

"NIQUAS"

(NON-POISONOUS)

IMPROVED

A Concentrated Extract of Quassia, combined with other valuable ingredients, forming a cheap, safe, and effective Insecticide for syringing and dipping. It destroys all Insect Pests infesting Trees and Plants, whilst no possible injury to vegetation can result from its use.

It can be applied with syringe or pump, or used for dipping.

PRICES Half-pint, 1/-; pint, 1/6; quart, 2/6; half-gallon, 4/-
gallon, 7/6; five gallons, 25/-; ten gallons, 40/-
1 gallon sufficient for 80 gallons of water.

STANDEN'S MANURE

(Established over 35 Years)

Exceeds all others in General Fertilising Properties and Staying Powers

Analysis on Application

Sold in Tins, 1/-, 2/6, 5/6 each; and in Kegs, well secured, to prevent loss through exposure, 28 lbs., 7/6; 56 lbs., 12/6; 112 lbs., 20/-

CORRY'S SPECIAL

Chrysanthemum Manure

Sold in Tins, 1/-, 2/6, 5/6, and Bags, $\frac{1}{2}$ cwt., 10/6; $\frac{1}{2}$ cwt., 18/-;
1 cwt., 32/-

For Fumigating in Greenhouses.

"LETHORION" Improved Metal Cones

Registered No. 62,597

To destroy Insect Pests. The Candle attached to each Cone only needs lighting, and there is no further trouble. They are most efficacious.

No. 1, for small frames of 100 to 600 cubic feet, 6d. each; Cone No. 2, 8d. each, 1,000 to 1,200 cubic feet: No. 3, 1/- each, 2,000 to 2,500 cubic feet.

Fowler's Lawn Sand

This preparation is for destroying Daisies and other weeds on lawns, and at the same time stimulating the growth of the grass. If one tin is tried as a sample, its value will be at once appreciated. Sales are largely increasing.

Tins, 1/-, 2/6, and 5/- each; Kegs, $\frac{1}{2}$ cwt., 8/6; $\frac{1}{2}$ cwt., 16/-;
1 cwt., 30/-

ELLIOTT'S

'Summer Cloud' Shading

Registered Trade Mark No. 14,629.

(The only genuine original and improved article)

For Greenhouses. A pleasant green shade is given to the glass.

In packets, 1/- for 100 feet of glass, and 2/6 each for 300 feet.

Sole Manufacturers:

CORRY & CO., Ltd
LONDON

SOLD BY ALL NURSERYMEN AND SEEDSMEN

CANADA
GUARANTEES
GOOD WAGES ON THE LAND:
DOMESTIC SERVICE AT GOOD
WAGES IN GOOD HOMES.
AND PROFIT BY FARMING
FOR

**THE
WILLING
WORKER**

For free maps, pamphlets and full particulars apply to Mr. JOHN WEBSTER, Canadian Government Emigration Agent, 17-19, Victoria Street, Belfast; Mr. EDWARD O'KELLY, Canadian Government Emigration Agent, 44, Dawson Street, Dublin; or to Mr. J. OBED SMITH, Assistant Superintendent of Emigration, 11 & 12, Sharring Cross, London, S.W.

the white and the red, and of the red sort there are two kinds, the one having leaves and root like to the White Beete; the other hath a great thicke roote, and is a stranger among us. . . . It is very well like to a Rape or Turnep, but very red within and sweeter in taste than any of the other two sorts. . . . The roote of the Romane or strange red Beete is boyled and eaten with oyle and vinegar before other meates, and sometimes with pepper, as they vse the common parsenep."

That the root was not generally eaten as well as the foliage appears from the following from Gerard's "Herball" (1597): "What might he made of the red and beautiful roote (which is to be preferred before the leaves, as well in beautie as in goodnesse), I referre vnto the curious and cunning cooke, who no doubt when he hath had the view thereof, and is assured that it is both good and holsome, will make thereof many and diuers dishes both faire and good" (see *Chard*).

Of modern varieties in cultivation, one is the White or Sicilian Beet, *B. Cica*, L. It is a native of Sicily, Spain, and Portugal, and was introduced in 1570. The large White or Swiss Chard Beet, a variety of the last, is peculiar for its thick ribs. It is stewed like seakale or asparagus.

Professor James Buckman regarded both the garden beet and mangold wurzel as derived from the maritime variety *B. maritima*, L. The various colours intensified in cultivated, ornamental forms may be detected in the wild plants. The sugar beet is also a selected form of the ordinary red-rooted beet.

Wild beet is a perennial, but both it and mangold wurzel have become biennials by cultivation. Mr. D. Macdonald tells us in his "Some Farm Crops" that beet "does not appear to have been brought into general use as an agricultural crop in England until the end of the eighteenth century," being introduced from Germany as mangold, and first raised from seed by Dr. Lettsom in 1786. Mr. L. Phillips, an experimentalist at Vauxhall, received a gold medal from the Society for the Encouragement of Arts "for his successful exertions in extending the culture of the variety of beet known as mangold wurzel, &c." Numerous varieties appeared subsequently. The three principal varieties now grown as the garden and sugar beets and the mangold wurzel are all very wholesome on account of the sugar which they contain. Dr. Lyon Playfair suggested that a good brown bread could be made by rasping down beet-roots with an equal quantity of flour, observing that the average quality of flour contains about 12 per cent. of nitrogenous matter and the average quality of beet only 2 per cent. The garden beet and the variety of sugar beet of France are about equal in value in sugar, containing 10 per cent., the water in the root being upwards of 82 per cent. Some sugar beets, however, contain a much higher percentage of sugar. The albuminoids or nitrogenous matters being only 0.1 per cent., the nutrient ratio is 1.29, the nutrient value 12.

Parsnip.

We have seen that the parsnip has been cultivated from antiquity to the present day; but Pliny tells us that it was "grown, either from the root transplanted or else from seed; but that it was impossible to get rid of the pungent flavour." It appears, therefore, that the Roman horticulturists knew nothing of the advantages of select-

ing, as is done at the present day, by means of which the best existing variety was obtained from the wild plant between 1818 and 1850, by selecting the seed from the best-rooted plants of each generation raised from seed of the wild plant.

This was done by the late Professor James Buckman in the garden of the Royal Agricultural College, Cirencester. He collected the seed from wild plants of the neighbourhood in 1847. "In 1848 they were sown, and in the spring of 1849 the reserved roots were dug up and the best put aside for transplanting. Late in the summer of 1849 the seed was collected, and sown in 1850. The result of the second sowing was that the leaves in all indicated an advance to the cultivated form. Some specimens were much finer than others, of good size and tolerably smooth outline."

Professor Buckman called the best "The Student," and sent the seed to Messrs. Sutton & Sons, of Reading. It was sent out by them, and greatly improved subsequently. It gained many prizes—as one writer observes: "This is the twelfth year in succession we have been awarded first honours for 'Student.'" Another writer says: "I had a fine crop of parsnips from the 'Student,' half a yard long and four or five inches round." The following are some conspicuous differences between the wild parsnip and the "Student":—

The root of a wild plant grown by the roadside in Dorset had a tough, wiry root, tapering somewhat from the crown. The leaves had petioles nine inches long, the leaflets being from one to two inches; the larger one three-quarters of an inch broad, and all pubescent or softly hairy.

HIGHEST AWARD (SILVER CUP) Royal International Horticultural Exhibition, London

Bentley's Weed Destroyer (POISON)

is the most powerful, and has the largest sale of all Weed Destroyers manufactured

DOUBLE STRENGTH 1 to 50. 3 galls. 10/-, 6 galls. 18/-, 12 galls. £1 13s., 20 galls. £2 7s. 6d., 40 galls. £4 10s.

BENTLEY'S Compound Liquid Quassia Extract (THE ORIGINAL)

A cheap, safe, and infallible destroyer of Aphis in all its forms : :

20 to 40 galls. 3/6 per gall. 10 galls. 3/7 per gall. 5 galls. 3/8 per gall. 1 gall. 4/2. 1/2 gall. 2/6. 1 quart 1/6. 1 pint 1/-

Complete Catalogue will be sent post free on application to the Sole Manufacturers

Joseph Bentley, Limited Chemical Works, BARROW-ON-HUMBER, HULL

The sheath at the base of the petiole was one and a half inch long, the first pair of leaflets being four inches above it.

The leaf of the "Student" is two feet long; the first pair of leaflets several inches above the sheath. They are oblong, about two inches across at the basal part, and four and a half inches in length, and smooth.

There are considerable differences between the above and the leaf of the old type of parsnip grown in the middle of the last century. The sheath of the leaf of this was very large, and reached up to the first pair of leaflets. These are much broader at the base, making them more oval, the lower ones being five inches long, the whole length of the petiole being about sixteen inches. Lastly, the serrations are coarser than those of the "Student," which imitates the wild plant more closely.

As a vegetable in the sixteenth century, Gerard observes: "The Parsneps nourish more than do the Turneps or the Carrots, and the nourishment is somewhat thicker, but not faultie nor bad. . . . There is a good and pleasant foode or bread made of the rootes of Parsneps, as my friend Master Plat hath set forth in his booke of experiments, which I have made no triall of, nor meane to do."

In 1730 Tournesfort tells us that in his day "they are commonly boiled and eaten with butter in the time of Lent; for that they are the sweetest, by reason the juice has been concocted during the winter, and are desired at that season

especially, both for their agreeable Taste and their wholesomeness. For they are not so good in any respect, ill they have been first nipt with Cold. It is likewise pretty common of late to eat them with Salt-Fish mixed with hard-boiled Eggs and Butter . . . and much the wholesomer if you eat it with Mustard."—From *The Origin and History of Our Garden Vegetables*.

Royal Horticultural Society of Ireland.

THE monthly meeting of the council was held at the offices, 5 Molesworth Street, Dublin, on the 9th ult., Mr. E. D'Olier presiding. The balance sheet of the spring show was submitted and approved and accounts relative to same with the cash prizes ordered for payment. The following were elected members of the Society, viz.:—Dr. Augustine Henry, M.A., Professor of Forestry, Royal College of Science, Dublin; Mrs. Scott-Moore, Curragh Camp, Co. Kildare; Miss Tottenham, Vevay, Ballybrack, Co. Dublin; Mrs. H. R. Gibbings, Ballybrack House, Killiney; Miss Cunningham, Trinity Hall, Upper Rathmines; Major Sterne, Bective House, Navan, Meath; Mr. E. Devine (practical), Montrose Gardens, Domybrook. A vote of thanks was accorded to Messrs. Chas. Ramsay & Sons for specimens of the fine Marguerite Daisy, Mrs. F. Sanders, and Zonal Pelargonium Maxime Kovalevsky sent to the meeting from the Royal Nurseries, Ballsbridge. The next monthly meeting of the council will take place on the 13th inst.

Smith's "Perfect" Patent Powder

MARVELLOUS INVENTION

TESTIMONY

ENNISCORTHY.

The Powder Weed Killer I got from you last month is the best I ever used.

GLENELLEN, MILTOWN.

Your Weed Killer is the only one I ever tried that is any use. Yours never fails.

—L. CREAGHE CREAGHE-HOWARD

WEED KILLER

MOST EFFECTIVE

Nothing like it ever seen before. Soluble in Cold Water. All Tins Free. No Return Empties.

4 Tins when mixed with water will cover about 100 square yards.

1 Tin, sufficient to make	25 gallons	£0 1 9	
4 Tins	100	0 6 6	
8 Tins	200	0 12 6	Box 3d. extra
12 Tins	300	0 17 0	4d. "
20 Tins	500	1 7 0	6d. "
40 Tins	1,000	2 8 0	1s. "

Carriage Paid on 8 Tins and upwards to Stations in Ireland.

SMITH'S LIQUID WEED KILLER

One gallon to make 25 gallons for use

1 gallon	1 9	6 gallons	9 6	16 gallons	1 2 0
2 "	3 6	8 "	12 6	18 "	1 5 0
3 "	5 0	10 "	14 0	20 "	1 7 0
4 "	6 6	12 "	17 0	10 "	2 8 0
5 "	8 0				

Carriage Paid on 8 gallons and upwards.

4 Gallons when mixed will cover an area of about 100 square yards.

	Double Strength (1 to 50)	PRICES —	
1 gallon	3 6	5 gallons	13 6
2 "	6 6	6 "	16 0
3 "	9 3	8 "	21 0
4 "	11 6	10 "	25 0
		16 gallons	38 0
		20 "	46 0
		40 "	88 0

Carriage Paid on 4 gallons and upwards. Drums and Casks charged extra, but full price allowed when returned in good conditions carriage paid

IRISH AGENT—

NOTICE. These Preparations are Poisonous. Sole Proprietors, MARK SMITH, Ltd.

D. M. WATSON, M.P.S.,

Horticultural Chemist

61 South Great George's Street

DUBLIN

Telephone, 1971

Notes.

STRAWBERRIES.

MESSRS. LAXTON'S Nurseries at Bedford cover an area of 100 acres, which is devoted to fruit trees, Roses, shrubs and strawberries. Their outside exhibit at the Chelsea Show showed excellent trees and well trained peaches, apples, plums, cherries, &c.

The Bedford Nurseries are the home of many of our best strawberries, and Laxton's inside exhibit showed that they are still bringing out improved forms to add to their reputation.

There were some very fine plants of King George V. strawberry, which is said to be the very



A GOOD NEW FORCING STRAWBERRY.
"KING GEORGE V."

best early strawberry yet raised, not excluding Royal Sovereign, as it forces several days earlier, is a better colour, a better flavour, and throws its trusses out more boldly, and Messrs. Laxton pronounce it to be the forcing variety of the future.

The Queen is a very highly flavoured strawberry, which will displace British Queen; also "The Earl" is an improved "Viscountess." Laxton's Main Crop and others were also shown. The stand also included fruiting, peaches, cherries, standard gooseberries and currants, Loganberries, the Laxtonberry in pots, and other berry-bearing plants, all exhibited with ripe fruit.

ANCHUSA ITALICA, DROPMORE VARIETY.

THE type *Anchusa italica* is rather a weedy subject producing flowers of such small size as to be hardly deserving of a place in the border. The Dropmore variety is, however, a plant of outstanding merit, and should be in every garden. So distinct is it from the type *italica* that it would readily pass for a distinct species, but the fact that it cannot be depended on to come true from seed tends to prove that it is merely an improved variety of *A. italica*—to which many of the seedlings revert.

The plant is of extremely vigorous growth, and with good cultivation forms a regular bush of from 7 to 8 feet high and nearly the same through. The flowers, which are copiously produced on the somewhat leafy branches, are of a rich deep blue, and nearly an inch across. The plant is best planted in groups in a sunny position on the border, and, as they are literally covered with flowers, a group when in bloom forms a regular cloud of blue. As the Dropmore variety cannot be relied on to come true from seed, propagation is usually effected by root cuttings. Portions of the fleshy roots cut into lengths of about 2 inches and inserted vertically in pots of sandy soil in winter grow readily if placed in gentle heat.

S. R.

INCARVILLEA GRANDIFLORA.

THIS choice plant is of comparatively recent introduction. First discovered in Northern China in 1890 by Prince Henry of Orleans, it was not until 1898 that it flowered for the first time in Britain. It is a perennial species, and forms a rather large and fleshy rootstock from which the leaves arise. The glabrous leaves, which are about 10 inches long, are pinnately compound, the leaflets being irregularly dentate. When first produced the leaves are almost erect, but they afterwards arch over nearly to the ground.

About the end of May, or early in June, the sturdy flower stem appears in the centre of the tuft of leaves. The stem, surmounted with a cluster of buds, lengthens to about 6 inches. As the flowers unfold each develops a stalk some 3 inches long branching from the top of the main flower stem. The flowers, which are trumpet-shaped, are nearly 1 inch across and 2½ inches deep in the tube. The limb is divided into four broad lobes of bright rosy carmine, which deepens towards the yellow tube, the throat of which is prettily blotched with white. Each flower lasts for about a week, and as strong plants produce from six to eight flower stems its flowering season extends to three or four weeks.

The plant prefers a dry, sunny position, and is readily raised from seed which is freely produced.

S. R.

PELARGONIUM MAXIME KOVALEVSKY.

THIS Zonal Pelargonium was distributed by M. Lemoine, of Nancy, France, in 1906, and not until five years later did it receive an award

Burall's Self-fastening —Address Labels—

A FLORIST writes:—"Repeat our order for these Labels. We can use no other."

Try one or adjust one—can simply back them on. They are made in all the usual sizes and qualities, and samples will be sent you free on request.

Send also for samples of

TREE TICKETS. ENVELOPES. WAGE CHECKS
SEED POCKETS. BULB BAGS. STRAWBERRY COALS
&c., &c.

BURALL BROS. The Patent Label
Factory
WISBECH **CAMBS.**

are the simplest, safest and most economical labels known. They are used by florists, &c., all over the country. They require no tying or adjusting—can simply back them on. They are made in all the usual sizes and qualities, and samples will be sent you free on request.

merit from the Royal Horticultural Society. Even Paul Crampbell took nearly ten years before it really became popular, for M. Lemoine distributed this fine variety in 1892.

Maxime Kovalevsky is a fine subject for winter and spring flowering in the greenhouse; it well grown the trusses will be large, with the individual flowers two inches across. As a bedding subject it has a great future, for the colour is new and striking, a vivid kind of salmon-scarlet. When used at Hampton Court Gardens it created a sensation, for the colour was new and attractive.

Awards at the Chelsea Show.

FIRST CLASS CERTIFICATES.

Meconopsis Delavayi.—Shown by Prof. Bayley Balfour, F.R.S., Regius Keeper of the Edinburgh Botanic Garden.

Nephrolepis exaltata Willmottæ.—Shown by Messrs. H. B. May & Sons.

Cupressus Lawsoniana Fletcheri.—Shown by Messrs. Fletcher Bros.

AWARDS OF MERIT.

Campanula Stevenii nana.—Shown by Mr. Reg. Prichard.

Lonicera tragophylla.—Shown by Messrs. Jas. Veitch & Sons, Ltd.

Pentstemon Davidsonii.—Shown by Mr. Clarence Elliott.

Saxifraga Grandfieldii.—Shown by Sir E. Hambro (gr. Mr. Grandfield).

Styrax Wilsonii.—Shown by Miss Willmott.

Begonia "Lena".—Shown by Messrs. Blackmore & Langdon.

Auricula "William Smith".—Shown by Mr. James Douglas.

Roscoea cauthioides.—Introduced from China and shown by Messrs. Bees, Ltd.

Rose "White Tausendschön."—Shown by Messrs. Wm. Paul & Son.

Rose "Nancy Perkins."—Shown by Messrs. Perkins.

Rose "Irish Fireflame."

Rose "Mrs. Campbell Hall" (Tea).—These two shown by Messrs. A. Dickson & Sons.

Sarracenia Brucei.—Shown by Mr. A. J. A. Bruce.

Calceolaria "Clarefield Gem".—Shown by Mrs. V. A. Little, Clarefield, Pinkneys Green (gr. Mr. W. Hulbert).

Aster Falconeri.—Shown by Messrs. Barr & Sons.

Cytisus Andreanus prostratus.—Shown by Mr. L. R. Russell, Richmond.

Shows.

THE Irish Rose and Floral Society hold their third annual Show in the Botanic Park, Belfast, on the 25th of July. Entries close on 18th July. The schedule is comprehensive, the classes for Roses and Sweet Peas being very numerous. There are nine Challenge Cups, while the money prizes are most generous, and should attract keen competition. In the Sweet Peas, Class 15A, the prizes are £5, first; £2, second; £1, third. Mr. Cowdy will act as judge, so that he is debarred from competing in it. The class is for one vase of Sweet Peas of three varieties, to consist of not more than twenty spikes in all, with own foliage, and is open to amateurs throughout Ireland.

THE Fethard Flower Show and Fête will be held at Grove House on Thursday, 31st July. The schedule is an interesting one, catering for growers of fruit, flowers, vegetables, &c. In Class 78 is a Grand Prize of £10 for Sweet Peas, consisting of twelve named varieties, twelve

Little's Weed Destroyers



KILLS ALL WEEDS, - - MOSSES, &c.,

On Carriage Drives, Gravel Paths.

Double the strength of most Weed Killers.

1 gallon to 50 gallons water.

1 gallon Drum, 2/6 ... Drum Free.
40 ,, Cask, 2/- per gal., Cask Free.

LITTLE'S WEEDOL
Powder Weed Killer

Per 1/9 Tin,
To make 25 Gallons.

Saves Trouble and Expense of Returning Packages.



Morris Little & Son, Ltd, Doncaster

sprays of each. Sweet Pea foliage only to be used as greenery, open to amateurs and gardeners residing in Ireland. £3 is also offered as first prize for Border Carnations.

The Kingstown Horticultural Society hold their Show on Wednesday, 30th of July, in the People's Park, Kingstown. Entries must be made before 23rd July. The Show is usually a bright and attractive one. The classes are numerous, including Fruit, Vegetables, Roses, Sweet Peas, Herbaceous Cut Flowers, &c., and six Silver Challenge Cups are for competition. This Horticultural Society is doing good and useful work, so should be supported.

Show Fixtures for 1913

This Schedule is designed to assist Societies in selecting dates for their Shows, by indicating what arrangements have already been made. Secretaries will greatly oblige by sending the earliest possible intimation of their fixtures, and of any change which takes place in their arrangements.

June	19th	Kilkenny Summer Show.
..	25th,	26th Mallow Show.
..	30th	Newry Show.
July	8th, 9th	Cork Summer Show
..	12th	Malahide, Fingal Horticultural Society.
..	15th	Dundrum, Co. Dublin.
..	18th	Stillorgan and Foxrock.
..	19th	Lucan, Saggart and Clondalkin.
..	25th	Irish Rose and Floral, Belfast.
..	26th	Terenure and District.
..	30th	Kingstown Horticultural Show.
..	30th	Co. Clare Horticultural Society, Summer Show at Ennis.
..	30th	North Kildare and District Horticultural Society at Straffan House, Straffan.
..	31st	Pethard Flower Show.
Aug.	5th	Navan Show.
..	8th	Portumna Show.
..	13th	Ballinasloe, Co. Galway, Horticultural Society.
..	14th	Banbridge Horticultural Society.
..	14th	Killarney.
..	15th	Naas District.
..	21st, 22nd	Larne Flower Show.
..	26th	R.H.S., Dublin Autumn Show.
September	4th	County Kilkenny Horticultural Show.
..	14th	Newtownards Horticultural Society.
Oct. 22nd, 23rd		R.H.S., Dublin Winter Show.
November	1st	Co. Clare Fruit and Farm Produce Show.
..	11th, 12th	Ulster Horticultural Society Chrysanthemum Show.

Catalogues.

MESSRS. WATSON send their list of Summer Bedding Plants. It includes Violas, Antirrhinums, Asters, Geraniums, Dahlias, and many more which are useful to give the garden a bright appearance throughout the summer months.

MESSRS. PRADAL & Co., 18 Windmill Street, Tottenham Court Road, London, send their Catalogue of Shrub Tubs, which have secured numerous awards and have been exhibited at the Chelsea Show. Their tubs are built in oak, teak and beech, and it is claimed that, by an entirely new wire-binding process, which advantageously supercedes the hoop binding method, absolute

immunity from shrinking, warping, &c., is obtained. The wire used is specially tested steel corrugated, and the tubs are bound inside as well as outside. Quite a good variety of sizes and shapes are made suitable for both indoor and outdoor use.

Dublin Wholesale Markets.

THE supply of produce at the markets for the past month was well maintained. Spring cabbages were plentiful, and prices therefore low. Broccoli are now becoming scarce, and good prices were obtained for selected lots. French beans have been on the market for the past few weeks, but the high price asked for them restricted the demand. The same may be said of new potatoes, which have been scarce up to the present.

Irish rhubarb was well in evidence, and first quality stuff realised good prices. The same remarks apply to parsnips, carrots, scallions, and lettuce, &c.

Home-grown apples were very scarce, the supply being limited to a few lots of Bramley's Seedling.

People growing apples for commercial purposes should turn their attention to the best late keeping varieties, and for this purpose there is nothing to equal Bramley's Seedling. There was a limited supply of gooseberries offered for sale, which was easily disposed of. Cross-channel fruits are still to be seen, and prices are somewhat higher than last month.

There was a good demand for cut flowers, but the supply was scarce, as the bulk of the spring bulbs are gone out of bloom.

The following is a price list for the month:—

VEGETABLES.		From		To	
		s.	d.	s.	d.
Beet	per bunch	0	1	0	6
Broccoli	per basket	3	6	5	6
Cabbage (York)	per load	5	0	12	6
Carrots	per doz. bunches	0	7	0	10
Lettuce	per tray	0	3	0	5
Leeks	per dozen	0	3	0	1
Mint	per bunch	0	2	0	3
Onions	per bag	0	6	7	6
Rhubarb	per doz. bunches	1	9	3	6
Spinach	per float	0	1	0	7
Scallions	per bunch	0	3	0	7
Seakale	per box	1	1	1	6
Swedes	per cwt.	1	2	1	1
Thyme	per doz. bunches	1	8	2	1
Turnips (White)	per bunch	0	2		
.. (Orange Jelly)	..	0	2	0	1

APPLES—		FRUIT.	
Bramley's Seedling	per dozen	2	0 2 1
Newtown Pippins	per case	9	6 11 0

CUT FLOWERS AND FOLIAGE.	
Anemones	per doz. bunches . 0 9 1 0
Arabis albidia	per bunch . 0 3 0 3
Arum Lilies	per dozen . 2 6 3 0
Carnations	per dozen . 1 9 2 0
Doronicums	per doz. bunches . 0 10 1 1
Roses	per dozen . 1 0 —
Tulips	per dozen . 0 5 0 7
Wallflowers	per doz. bunches . 1 10 2 0
Asparagus plumosus	per bunch . 1 3 1 6
Asparagus Sprengeri	per bunch . 0 11 1 2

Miscellaneous Section.

THE POPULARITY OF XL ALL SPECIALITIES increases every year. All gardeners proclaim that nothing equals these celebrated preparations.

XL ALL NICOTINE VAPORISING COMPOUND, the gardeners' favourite Fumigant, both Liquid and Cake.

XL ALL NICOTINE INSECTICIDE WASH for Syringing, Dipping, and Dressing Fruit Trees and Plants, Mealy Bug, Scale, &c., cannot exist where this is used.

XL ALL INSECTICIDE WASH B (sine Nicotine), best non-poisonous Wash on the Market.

Other Preparations of great renown are **XL ALL WEED KILLER**, "used once a year no weeds can live." **RICHARDS' WORM POWDER** for lawns, non-poisonous. Don't forget to ask your Nurseryman or Seedsman for my small pink list. **G. H. RICHARDS**, Manufacturer, 234 Borough High Street, London, S.E.

LANDSCAPE GARDENING

DESIGNING, Laying out and Planting of New and Renovating of Old Gardens. The Making and Planting of Rock Gardens, Rockeries, Water and Bog Gardens, and Pergolas a Speciality.

Plans Prepared.

Estimates Free.

RICHARD C. McM. SMYTH, F.R.H.S.
Mount Henry Dalkey, Co. Dublin

BIRDS SCARED.—Rotless Tanned Netting. Small mesh; very superior; as supplied by us to the Royal Gardens. Satisfaction or cash refunded. 100 × 1 yard, 3/9; 2 yards, 7/6; 3 yards, 11/3; 4 yds., 15/-; 50 × 6 yds., 11/3; 25 × 8 yards, 7/6; carriage paid. Any length and width supplied. **POTTER BROS.** (Dept. T.), Shrewsbury. Estd. 58 years.

LAWN MOWERS.—Nothing to equal them, only 12/9. Garden Rollers, 24/-; Seats, 8/6; Barrows, 14/6; Water Barrows, 20 gallon, 25/6. Get our free list and save money. **POTTER BROS.** (Dept. T.), Shrewsbury.

TENNIS COURT NETTING.—Rotless; Superior. Strong Tarred Top and Bottom Lines. 25 × 2 yds., 6/-; 3 yds., 7/-; 4 yds., 8/- Tents, 22/- Army Bell Tents, all complete, 37/6. All kinds of Tents supplied. Lists free. **POTTER BROS.** (Dept. T.), Shrewsbury.

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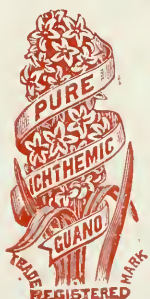
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Gates open 1 o'clock p.m. Exhibition closes 6 p.m.

Admission, 6d. Children, 3d.

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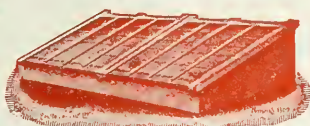
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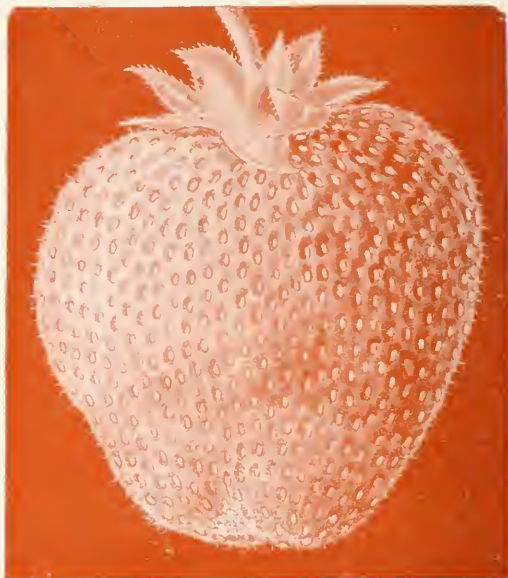
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Carriage Paid on 8 Tins and upwards to Stations in Ireland.

SMITH'S LIQUID WEED KILLER

One gallon to make 25 gallons for use

1 gallon	1 9	6 gallons	9 6	16 gallons	1 2 0
2 "	3 6	8 "	12 6	18 "	1 5 0
3 "	5 0	10 "	14 0	20 "	1 7 0
4 "	6 6	12 "	17 0	40 "	2 8 0
5 "	8 0				

Carriage Paid on 8 gallons and upwards.

4 Gallons when mixed will cover an area of about 400 square yards.

	Double Strength (1 to 50)	PRICES -	
1 gallon	3 6	5 gallons	13 6
2 "	6 6	6 "	16 0
3 "	9 3	8 "	21 0
4 "	11 6	10 "	25 0
		16 gallons	38 0
		20 "	46 0
		40 "	88 0

Carriage Paid on 4 gallons and upwards. Drums and Casks charged extra, but full price allowed when returned in good condition, carriage paid

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ENNISCORTHY.

The Powder Weed Killer I got from you last month is the best I ever used.

GLENELLEN, MILTOWN.

Your Weed Killer is the only one I ever tried that is any use. Yours never fails.

—L. CREAGHE CREAGHE-HOWARD

IRISH AGENT—

NOTICE. These Preparations are Poisonous. Sole Proprietors, MARK SMITH, Ltd.

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Horticultural Chemist

61 South Great George's Street DUBLIN

Telephone, 1971

Obituary.

MR. AMOS PERRY.

WITH much regret we record the death of Mr. Amos Perry, which took place at Enfield on June 10th. Mr. Perry was born on September 22, 1811, and started life as a pupil teacher, but, owing to failing health, he obtained employment in the open air at a Gloucestershire Nursery. Later on he went to Ware's Nursery, eventually becoming a partner in the concern; after that he began business at Winchmore Hill, and finally moved to the more spacious grounds at Enfield.

Mr. Perry was one of the few who believed in the future of hardy plants from the first, although they were not popular in his early days. Until a few years ago he was a frequent visitor to Ireland, and few men had such keen eyes to note a good plant or an improved seedling form. This keen observance was one of the leading factors which helped him to gather together such a remarkably fine collection of hardy plants in his nursery, while to his collecting in the Pyrenees we owe the beautiful white form of *Rainondia pyrenaica*.

Mr. Perry's stands of hardy flowers at the leading shows have always been interesting and attractive, and have done much to educate the popular taste for these flowers, while one usually found something novel in his collections. Very numerous are the awards which Mr. Perry has received for good varieties of Oriental Poppies, Delphiniums, Phlox, Aslers, Achilleas, &c., of his own raising, and we are pleased to know that the sons in the business are to carry on his good work in raising and distributing hardy plants.

Perpetual Flowering Carnations.

Plant now in the open border for a continuous display of bloom our hardy Perpetual Carnations Collection No. 9 of 12 Extra Strong Plants, in pots, including Novelties, 9/6, carriage paid for cash with order.

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NEW, RARE AND CHOICE HARDY FLOWERS FROM SEEDS

The Herbaceous border and Rockery are now the most attractive feature of the garden, and no garden is complete without a fair collection of hardy plants. The raising of these beautiful plants from seeds is at once most interesting and economical. Keen and up-to-date amateurs should not

THOMPSON & MORGAN'S
58th ANNUAL SEED CATALOGUE

which they will find of immense value and interest
CARR STREET IPSWICH

Correspondence.

TO THE EDITOR OF IRISH GARDENING.

DEAR SIR,—We notice in Mr. J. W. Besant's interesting article on *Waterside Irises*, p. 88, that *I. Bulleyana* is described as yellow, but it is really blue, and on our young stock the flower stems are about a foot high. The true yellow *I. Forrestii* and *Wilsoni* are just coming into flower with us, and seem a little later than *sibirica*. The flowers are not large, but will be valued because of the new colours they provide in this grass-leaved group.

Another *waterside Iris* worth drawing attention to is *I. bevigata alba*. Those who know it speak of it as superior to *I. orientalis* "Snow Queen." It is a very pure white, with the palest tinge of lavender on the style-arms, and is very vigorous and floriferous, flowering a fortnight or more before the *Kämpferi*, and with us before *I. albopurpurea*. Yours faithfully,

R. WALLACE & Co.

In reply to a question about the winter temperature at Aldenham, the Hon. Vicary Gibbs writes:—

"The lowest temperature I ever knew to be registered here was three degrees below zero, in January, 1895, but, though it is a cold place, it is not the winter frosts that do the most damage, but the fact that we never know when we have done with winter, and at one time or another we have had frost during every month of the year. Severe frosts late in May are common, though we did not have one this year, but last year we had

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twelve degrees at the very beginning of October, which did a frightful lot of damage.

"In 1895 we had every *Olearia* *Haastii* and every *Veronica*, including *Traversi*, and every standard *Rose* killed stone dead.

"Aldenhurst garden is fairly sheltered from north and east by woods. The rainfall is said to be 21 in. average per annum, but is very often below that, and we are generally in want of rain, a very different condition to Ireland. When our soil is wet it sticks to your boots like putty, and the whole country gets up and follows you; when dry it is like iron, and cracks into enormous clefts, which expose the roots of shrubs and trees. Our strongest wind is the south-west, but we get off lightly in that respect as a rule."

"Pennicks."

EX ROUTE.—Not a few who joined the combined excursion of the Dublin Seed and Nursery Trades Employés and the Irish Gardeners' Association to "Pennicks," on the 11th ult., making up a party of some seventy all told, will have and hold pleasurable recollections of this outing mid the mountains of Wicklow under tropical sunshine. It was a quick run from Westland Row, with a glimpse of some of the party as we rushed through Blackrock station, waiting to board a train, which, once started, seemed inclined to stop at nothing and nowhere, so there was no help for it and—they arrived later. It is, of course, uphill from Greystones to Delgany, above which the Nurseries lie, and with a guide to show us a near cut by devious ways across the meadows, which he himself seemed not too well acquainted with, those of the fat and forty variety lost much moisture, which was thoughtfully and promptly replenished on arrival, and later on the Harcourt Street contingent arrived also hot and happy.

LESSER THINGS.—Mr. I. P. Jones, President of the Dublin Seed and Nursery Trades Employés' Association, and Proprietor of "Pennicks," pioneered the first contingent, and here followeth some of the things seen in the Nurseries of 35 acres, including ten of fruit trees:—Among various Meadow Rues, *Thalictrum* *dipetocarpum*, not yet in flower, was regarded with interest, as was likewise *Mutisia* *decurrens*. *Crinodendron* *Hookeri* is happy on the old-fashioned residence, as is *Cestrum* *fascicularis* and *Sollya* *heterophylla*. *Potentilla* *Vilmorinii* is highly spoken of, and there is no question as to the beauty and superiority of *Abutilon* *vitifolium* *album* in its large, satiny-white blossoms, and the double white *Lilac*, *Madame Lemoine*, at its best, was much admired. Among the hardy flowers in the numerous borders and plots negotiated by the party nothing was more striking than *Verbascum* *Caledonia* in its bronzy-hued flower spikes shot with purple, the

Daisy Hill seedling bicolored Broom, of the *Andreasus* type being equally attractive.

SHRUBS AND TREES.—*Abelia* *rupestris*, *Olearias* *Fosteri* and *nitida*, *Pittosporum* *Buchanani*, and the very distinct *Escallonia* *organensis* were noticed, but the king of the shrubby things in flower this day was *Pittosporum* *coriaceum* with white scented blossoms in the way of *tobira*. A most distinguished Oak of shrubby habit is *Quercus* *glabra*, but of the huge specimen, *Rhododendron* *arboreum*, its glory had departed for the season. Other things noted were the *St. John's Bread*, *Ceratonia* *Siliqua*, *Ligustrum* *Delavayana*, the Cockspur Thorn, *Crataegus* *Crusgalli*, a bright bit of foliage being disclosed in *Kämpfer's Elm*. We have no intention, however, of labouring a list of the many things seen—rare, curious, useful, beautiful, or interesting, all that is given in the firm's comprehensive catalogue. The fates forbid, nevertheless, that we should omit *Myrtus* *Luma*, 25 feet high, and rotund in proportion, or the grand old specimens of *Pinus* *Laricio* and *Pinus* *Pinea*, whilst the *Araucarias* are, perhaps, the arboreal features of the Nurseries.

EXCELSIOR AND AU REVOIR.—High as the party was above the sea level nothing must do but heavenwards still in the way of climbing Kendals-town hill, into which the stout parts of the party were beguiled, and who, notwithstanding avoidupois, found soulful refreshment in the fair scene of seascape and landscape, including more mountainous regions beyond. Prior to this exploration the whole party, consisting of the two contingents, with the addition

ANDERSONS' Garden Hose.

33 Gold Medals and Awards



1/2 in. x 1 Ply.	25	0	60 ft.
1/2 "	2	31	3 "
1/2 "	3	37	6 "
5/8 "	2	37	6 "
5/8 "	3	45	0 "
3/4 "	2	45	0 "
3/4 "	3	52	6 "
1 "	3	72	6 "

SEAMLESS—RED RUBBER
SPLENDID HOSE for GARDEN,
LAWN and GREENHOUSE

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Snails and Worms don't like it

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of local units, had been regaled with tea and toothsome dainties *à fresco*, and a brief expression of thanks to the kind host and hostess terminated a particularly pleasant and instructive outing to "Pennicks." K., Dublin.

Royal Horticultural Society of Ireland.

THE monthly meeting of the Council was held at the Society's offices, 5 Molesworth Street, Dublin, on the 13th ult. Present—Lady Albreda Bourke, J. Wylie-Henderson, J. J. McDonough, G. Watson, E. H. Walpole, W. F. Gunn, Canon Hayes, M.A.; Captain Riall, D.L.; D. L. Ramsay, J.P., with Alderman Bewley presiding. The revised Spring Show schedule for 1914 was submitted, and, with the addition of a class for *Mahmaison Carnations*, approved and passed. A unanimous vote of thanks was accorded to Mrs. Geo. Mitchell, Ardlui, Blackrock, for the presentation of a challenge cup for the Spring Show class for twenty-four vases of hardy flowers. The following were elected members of the Society, viz.:—Captain Shuldham, Oonavarra, Gorey, Wexford; Miss E. D. Colvill, Holywell Cottage, Howth; Dr. McDougall, Drundleck, Howth; and Mr. John Good, The Moorings, Merrion Road, Dublin. A cultural certificate was awarded to Judge Bird, Churchtown House, Dundrum, for a fine flowering specimen of *Saxifraga longifolia*; the thanks of the Council being accorded to S. A. Jones, F.R.H.S., Forest Lodge Nurseries, Gowran, Co. Kilkenny, for a collection of Pansies, and to Captain Riall, for *Crinodendron Hookeri* and *Calceolaria violacea*.


Movable Hot-houses.

ANY means by which glass-house work can be rendered more readily available for crops for market-garden purposes is likely to prove of great interest and value. One of the Board's inspectors has recently visited Worthing to see the movable hot-houses introduced by Mr. Pullen-Burry. A movable hot-house is no new thing, but one type introduced some years ago has not been a success chiefly owing to the difficulty of moving it, and to the fact that the weight of the roof caused the sides to give. Both these points have been overcome in Mr. Pullen-Burry's invention, the weight being taken by what may be called the "chassis," which is low down and strongly built, while owing to the gearing arrangement, the whole affair can be easily moved with one hand. The wheels, which run on cement tracks, are plain, the cogs which drive them being at the side and meshing with a cog-wheel on the shaft which runs through the house. An earlier pattern house, which Mr. Pullen-Burry still has in use, is a comparative failure owing to the torque or twisting in the shaft, which caused one end of the house to move before the other end started, but this has been overcome in the new houses, and the two ends move together. The houses appear to be correctly built, and do not seem likely to give or collapse even after years of use, while the mechanism is simple and would not get out of order. The present house only allows of plants up to about eighteen inches in height being grown, but houses can be built on the chassis to any reasonable height to allow them to pass over trees and shrubs, which could be nailed

87 per cent. of sound fruit out of your orchard.

HOW does that appeal to you? It is the result of spraying an orchard with Berger's Arsenate of Lead mixed with Berger's Lime-Sulphur—the two together destroy all insect pests and all fungus diseases without harming trees, fruit or foliage. The Arsenate of Lead must be "neutral" or it will burn the foliage, and the Lime-Sulphur must be "standard strength"—so to ensure safety, say "Berger's" when you buy Insecticides or Fungicides.

Ask for free handbook on spraying—and spray now with the "neutral"




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Arsenate of Lead

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up on trellis if necessary and bent down to allow the house to pass over them. The inventor finds that for some crops—e.g., spinach—even three days' forcing makes a very great difference, and by means of the movable house not only can a succession of any particular crop be got, but crops can be so arranged on the plots that directly one crop is ready for marketing, the house is moved on to the next. As many of the crops, such as bulbs, asparagus, mint, &c., would remain in the ground for several years, a man would require comparatively little labour, and Mr. Pullen-Burry claims that one man can easily work an acre of land on this principle, while the theoretical profits are large. Although such profits would not always be obtained, there is no doubt that the profits should be good, as the crops would be early on the market when prices were high. Another advantage of the system is that such flowers as double narcissi and peonies, which cannot be forced if they are shifted, remain in their beds and are then readily forced.—From *The Journal of the Board of Agriculture*.

The Intensity of Light and its effects on Vegetable Assimilation.

IN laboratory experiments on carbon assimilation it has been demonstrated that assimilation is more active in direct sunshine than in diffuse daylight, and, by analogy, it has been assumed that the same held good for vegetation under natural conditions. Of course under field conditions, the plants exposed to diffused daylight are also exposed to far more humid conditions generally, and the larger supply of water more than counteracts the effect of the greater light intensity. But given that the water supply was always sufficient, what is the effect on vegetation of light of high intensity? In order to test this point a crop of lucerne was set aside at Meudon during the three summers, 1910, 1911, and 1912. Part of it was given no special treatment, while the other received 10 litres of water per square metre every 7 days, so that the soil never dried out. The yields of dry matter per square metre per day were as follows:

	Under natural conditions	Watered
1910 . . .	5.24 grams	10.56 grams
1911 . . .	1.21 ..	7.00 ..
1912 . . .	3.12 ..	9.12 ..

During the years 1910 and 1912 the sky was overcast during the greater part of the summer, whilst 1911 was a season of bright sunshine and drought. The yields under natural conditions show the relative importance of light intensity and water supply in plant growth, but even when the latter factor is eliminated by artificial watering, the more intense light appears to have an unfavourable effect on the production of vegetable matter.

This apparently contradictory result obtained when a laboratory experiment is extended to field conditions arises from the fact that in the laboratory the plants are necessarily kept in an artificial atmosphere relatively richer in carbon dioxide in order that it should be possible to detect variations in the percentage of that gas caused by the process of carbon fixation; whilst in the natural atmosphere the amount of carbon

dioxide present is so small that the solar radiations, be they diffused or direct, are always sufficient to make the best use of the carbon dioxide. In other words, carbon assimilation is limited by the amount of carbon dioxide in the air, and not by the intensity of the solar rays—*Monthly Bulletin of Agricultural Intelligence*

Some New and Unusual Insect Attacks on Fruit Trees and Bushes.

By PROFESSOR F. V. THEOBALD, M.A., F.E.S.,
South-Eastern Agricultural College, Wye.

SEVERAL interesting attacks of insects on fruit trees and bushes have to be recorded for the past year.

Amongst those of special interest is an apple leaf sawfly (*Lygaonematus moestus*, Zaddach), which has not previously been recorded as British.

It is interesting to note here the change of host plants by two insects—namely, the beech orchestres (*Orchestes fagi*), recorded as feeding on apples in Devonshire, and the ash and willow scale (*Chionaspis salicis*) attacking currants at Woburn and Wye.

Three well-known insects are also recorded for the first time as attacking fruit in this country—namely, the garden chafer (*Phyllopertha horticola*), eating apples; the V-moth (*Halva wavyaria*), on currants and gooseberries; and *Pseudococcus aceris*, signoret, on apple trees.

A new capsid bug attack (a species of *Atractononcus*) on apples in Suffolk and Hereford is also worthy of notice. The number of Capsidæ attacking apples is gradually increasing. It is difficult to distinguish their damage to the fruit from damage by thrips, and to the leaves from damage by collembola. Catching the insects only will decide which is the culprit.

The Apple Leaf Sawfly.—The larvae of this sawfly (*Lygaonematus moestus*, Zaddach) have been sent to me from Week Green, near Peterstield (Hampshire), and from Mortimer (Berkshire), where they were feeding on apple foliage. I found a small colony also near Wye on a Worcester Pearmain in 1907, but did not rear them.

The larvae were first sent to me from Week Green by Mr. T. E. Crompton on June 6th, 1911. He found them in two orchards $1\frac{1}{2}$ miles apart, and on June 10th he sent another supply, these being considerably smaller than those first received. The first pupated on June 13th, and the last on July 22nd. Some of these pupated in the soil, others on the soil, and some amongst the foliage. Those in and on the soil covered the yellowish silk of their cocoons with fine particles of earth; those on the foliage had thick cocoons of pale dull yellowish to brownish silk. The adults hatched out from April 20th to May 5th, 1912.

The colony from Mortimer, twenty in number, was found on a "mother" apple, and was sent to me by Mr. G. D. Lake on June 11th, 1912. All pupated amongst the foliage, making similar cocoons to those which pupated amongst the leaves in the previous year. Others were found at Week Green in 1912.

The larvae are very marked in appearance and feed freely on the leaves, mainly eating them

from the edge inwards, but now and then devouring holes in the leaves.

The adult larva is apple green, with a small, somewhat irregular, black spot on each side of the first four segments, and a large round black spot on each side of the next seven segments; numerous small black specks occur on the first four segments and some on the sides of the others; the head is green, with black eyes; the legs are green. It is half an inch in length. A few showed a more yellow tinge.

The adult is shiny black, with paler incisions on the venter; the legs and also the base of the wings are pale.

The Beech Orchestes.—This well-known beech insect (*Orchestes fagi*, *Barcens*) was reported and sent from Devon in June, as the cause of a serious loss to apples at Harpford, Ottery, St. Mary. Captain Chancellor sent with the beetles a number of damaged apples upon which the *orchestes* had been feeding. The method of attack is for the beetles to settle on the fruitlets when from the size of a filbert to that of a walnut. They collect in groups and eat small holes into the young apples, and as many as fifteen of the weevils were found in the same hole; some holes formed were half an inch across, while others were quite small. The attacked fruitlets also split from the seat of damage, sometimes on one side only, sometimes on both sides. Cox's Orange Pippins were mainly attacked, and a large portion of the crop was ruined.

To verify the cause of this damage a number of beech *orchestes* were caught at Wye and placed on an apple tree under muslin; by the next day they had commenced to work in a similar way to those in Devon. The orchard in Devon was surrounded by beech and oak trees, and this well-known forest insect apparently suddenly changed its habits. As is well known, it lays its eggs in the beech leaves, the larvæ tunnelling into the leaves from the tips downwards.

The apples had been well sprayed with arsenate

of lead, but this had no effect whatever on the beetles. A subsequent spraying with "Abol" appeared to check them.

It was a surprise to find these beetles doing the damage; to ensure correct identification, Mr. Gahan kindly examined them for me.

It is interesting to note that in Illinois an *orchestes*, the *O. canus*, Horn, attacks apples, but in a different way. This weevil, named the apple flea weevil, lays its eggs in the outer part of the leaf in one of the principal veins, and the larvæ tunnel into the leaf much as in the case of the *orchestes* of the beech in Britain. In addition to this, the adult beetles eat holes in the foliage, just as our beech *orchestes* does in beech leaves.

It appears, however, that *orchestes fagi* only attacked the apples themselves in South Devon, as no trace of leaf damage could be found.

The Garden Chafer eating Apples.—Although well known as a destructive insect in its larval stage to grass and roots generally in Britain, I am not aware that the garden chafer (*Phyllopertha horticola*, Fabr.) has been noticed to attack apples in its adult stage in this country. In May, Mr. Oswald Ellis, of The Fruit Farms, Bramley, Surrey, sent various apples badly damaged, with an inquiry to know if the small chafers could possibly be the culprits. Later they were found in vast numbers and devoured the young apples ravenously. Worcester Pearmain was chiefly attacked. Many bush trees had fifty to one hundred beetles shaken from them.

Placed on large apples, they soon set to work—a single beetle spoiling no less than ten apples on one bright day.

A similar attack is well known in Germany. Dr. Reh describes and figures the damage caused by this chafer.

Jarring the beetles off is the only method of combating them. As they are active in bright weather, this should be done as far as possible in dull weather or towards evening.—From *The Journal of the Board of Agriculture*.

Little's Weed Destroyers



**KILLS ALL
WEEDS, - -
MOSSES, &c.,**

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Double the strength of
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1 gallon to 50 gallons
water.

1 gallon Drum, 2/6 ... Drum Free.
40 „ Cask, 2/- per gal., Cask Free.

LITTLE'S WEEDOL
Powder Weed Killer

Per 1/9 Tin,
To make 25 Gallons.

Saves Trouble and
Expense of Returning
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Shows.

THE Lucan, Saggart and Clondalkin Show is to be held on Saturday, 19th inst., in the "Cottage Gardens" of Lucan Demesne, which are not usually open to the public, but are kindly lent by the President, Capt. C. C. Vesey, for this occasion. In such beautiful surroundings the show is sure to be a great attraction. The schedule includes cottagers and open classes, comprising vegetables, fruits, pot plants, roses, sweet peas, annual and herbaceous cut flowers, &c. Entries close on the 15th inst. There is to be a band and various sports for those fond of recreation.

THE North Kildare Horticultural Society is holding its Show on Wednesday, 30th inst., at Straffan House, Straffan, by the kind permission of C. H. Barton, Esq., D.L. An interesting schedule is sent which caters for cottagers and open classes, including roses, sweet peas, in fact all kinds of flowers, fruit and vegetables, poultry and other products of a country home. A silver challenge cup is offered for competition amongst the nurserymen of Ireland for the best trade exhibit of stand of plants and cut flowers. The show should prove a most attractive one, for the Straffan Gardens will well repay a visit.

Show Fixtures for 1913

THIS Schedule is designed to assist Societies in selecting dates for their Shows, by indicating what arrangements have already been made. Secretaries will greatly oblige by sending the earliest possible intimation of their fixtures, and of any change which takes place in their arrangements.

July	8th, 9th—Cork Summer Show
"	12th—Malahide, Fingal Horticultural Society.
"	15th—Dundrum, Co. Dublin.
"	18th—Stillorgan and Foxrock.
"	19th—Lucan, Saggart and Clondalkin.
"	25th—Irish Rose and Floral, Belfast.
"	26th—Terenure and District.
"	30th—Kingstown Horticultural Show.
"	30th—Co. Clare Horticultural Society, Summer Show at Ennis.
"	30th—North Kildare and District Horticultural Society at Straffan House, Straffan.
"	31st—Fethard Flower Show.
Aug.	5th—Navan Show.
"	8th—Portumna Show.
"	13th—Ballinasloe, Co. Galway, Horticultural Society.
"	14th—Banbridge Horticultural Society.
"	14th—Killarney.
"	15th—Naas District.
"	21st, 22nd—Larne Flower Show.
"	26th—R.H.S., Dublin Autumn Show.
September	4th—County Kilkenny Horticultural Show.
"	11th—Newtownards Horticultural Society.
October	2nd—Roscrea Show.
"	22nd, 23rd—R.H.S., Dublin Winter Show.
November	1st—Co. Clare Fruit and Farm Produce Show.
"	11th, 12th—Ulster Horticultural Society Chrysanthemum Show.

Dublin Wholesale Markets.

IT is impossible in these brief notes to describe the amount of business transacted in the market for the past month. Buyers had such a large selection to choose from that only first quality stuff realised good prices. Small fruits seemed to claim first consideration, especially gooseberries, and, judging by the amount already marketed, the crop should be up to that of last year. Choice fruits, such as peaches, grapes, cherries, &c., were well in evidence, and were disposed of at good prices.

The supply of flowers was well maintained, but the prices realised for outdoor stuff would scarcely pay for the labour of marketing. The long-felt want for bedding plants for the small city gardens has now been supplied. It is pleasing to note the amount of plants disposed of for this purpose.

Cabbages have been plentiful, and the quality has much improved. Broad beans and peas were somewhat scarce for the season of the year. First quality rhubarb met with a ready sale at profitable prices. On the whole the supply of vegetables was equal to the demand, indeed in some cases exceeded it.

PRICE LIST—FRUIT.		From To			
		s.	d.	s.	d.
Gooseberries	per quart	0	2½	0	5
Strawberries	per lb.	1	0	3	0
Peaches	per dozen	4	0	7	6
Cherries	per lb.	0	8	1	0
Melons	per dozen	12	0	18	0
VEGETABLES.					
Asparagus	per bundle	0	8	1	0
Broccoli	per flasket	2	9	4	0
Cabbages (York)	per load	8	0	13	0
Cucumbers	per dozen	2	6	3	6
Carrots	per bunch	0	10	1	4
Celery	"	0	8	0	10
Lettuce	per tray	0	7	0	10
Mint	per doz. bunches	2	0	3	0
Parsley	per tray	0	7	0	9
Potatoes (New)	per stone	1	5	1	8
Rhubarb	per doz. bunches	2	6	3	0
Scallions	per bunch	0	3	—	—
Turnips (white)	"	0	3	0	5
FLOWERS.					
Anemones	per doz. bunches	0	5	0	7
Carnations	per dozen	1	2	1	10
Lily of the Valley	per doz. bunches	2	6	3	0
Pinks (Mrs. Sinkins)	per bunch	0	3	0	5
Pyrethrums	"	1	0	1	4
Peonies	per dozen	0	6	0	8
Sweet Peas	per doz. bunches	2	8	3	0
Roses	per dozen	0	5	0	8
Violas	per bunch	0	3	0	5
Geraniums (in 5-inch pots)	per dozen	1	0	5	6

T. B.

Miscellaneous Section.

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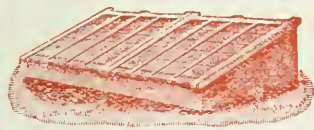
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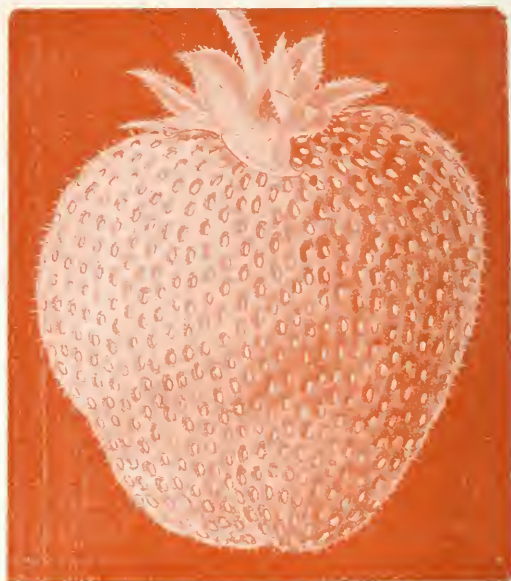
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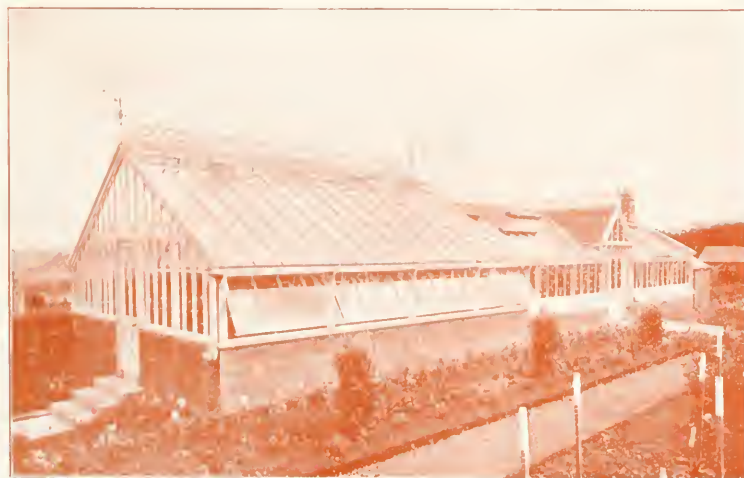
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Royal Horticultural Society of Ireland



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THE GROUNDS OF

His Lordship's Stephen's Green

Residence (Entrance from
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On **TUESDAY, 26th AUGUST, 1913**

Entries close on 19th August

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The earliest and best cabbage in cultivation. Remarkably free from any tendency to 'bolt'

Obituary.

MR. ROBERT SYDENHAM.

WITH great regret we record the death of Mr. Robert Sydenham, of Birmingham. On Friday, July 18th, he went from London to the Birmingham Show; on Saturday, July 19th, he was at his offices in Tenby Street, and was there found insensible at 11 o'clock, never regaining consciousness.

Mr. R. Sydenham was born at Salisbury in 1818, and there received his early education. He was first apprenticed to a firm of general merchants, and then went into partnership with a brother in the jewellery business.

Gardening was his hobby. First he began to buy bulbs for his friends; then he started a small business in seeds and bulbs, which has grown to be one of the best known of its kind. Sweet Peas, Daffodils and Carnations were the subjects for which he was best known, and many of his competitors admired his energy and business talent.

Mr. R. Sydenham was a good friend to the Midland Daffodil and other societies and charities, and many will miss his generosity and friendship.

Correspondence.

SIR,—As it stands, Messrs. R. Wallace & Co.'s letter on page x of your issue for July seems rather misleading.

The so-called Iris *lavigata alba* is, I think, only an albino form of *I. orientalis*, the Eastern relative of the European *I. sibirica*. The plant is sent out by Japanese firms under the name of *lavigata*, but it has nothing to do with that

species, of which, indeed, there is no pure white form known, the variety *albo-purpurea* being the nearest approach to it.

"Snow Queen" and "*lavigata alba*" are only seedling forms of the same species, and, though the latter is certainly more vigorous than the former, it is not a difficult matter to raise other seedlings which are equally, if not more, vigorous and floriferous.

A real white *lavigata* would indeed be a glorious Iris, as the blue type is, to my mind, by far the best blue Iris in existence. This year I have had a number of seedling plants of it in flower, and as each stem produces as many as four flowers in succession from the single terminal head, the display continues for some considerable time. Unfortunately, *I. lavigata* is an extremely rare plant. It is entirely distinct from *I. Kamperi*, from which it may be distinguished by having no raised central ribs on its foliage and by its seeds, which closely resemble those of *I. pseudoacorus*.—Yours faithfully,

W. R. DYKES.

Charterhouse, Godalming.

Royal Horticultural Society of Ireland.

THE monthly meeting of the Council was held at the society's offices, 5 Molesworth Street, Dublin, on the 11th ult. A letter was read from the Royal Dublin Society stating that a sum of one hundred guineas had been voted for the Spring Flower Show for 1911, arrangements for which will be on the same lines as previously. Judges were nominated for the Autumn Show to be held in Lord Iveagh's Grounds, Stephen's Green, Dublin, on Tuesday, August 26th, and other arrangements made, including an alteration in the closing time.

Perpetual Flowering Carnations.

Plant now in the open border for a continuous display of bloom our hardy Perpetual Carnations Collection No. 9 of 12 Extra Strong Plants, in pots, including Novelties, 9/-, carriage paid for cash with order.

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Dewdrop Sprinkler



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Price 6/8 each, post free.

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which has been fixed for 6-15 p.m. for the closing of the grounds, the tents being closed at 6 p.m., with the exception of the large tent devoted to trade exhibits, which will be open till 6-15 p.m. A vote of thanks was accorded to Messrs. Chas. Ramsay & Sons for specimens of *Achillea millefolium rosea*, *Cerise Queen*, and *Violas Moseley*, *Perfection* and *Purple King*, sent in from the Royal Nurseries, Ballsbridge.

Cocoanut Fibre.

This material has been well described as one of the gardener's friends. The fresher it is the longer it will last, and the better for all purposes. In the propagating frame it may be used to plunge the cutting and seed pots, helping them to keep moist, while many tender and difficult plants form roots if the cuttings are simply laid in the fibre. If failure has been experienced with cuttings in a pot, try them in the fibre.

Being a cheap material it may be used with great advantage for top-dressing window boxes and beds, giving a neat and tidy appearance; besides preserving the moisture in the soil, it also greatly improves stiff and heavy soils. Of recent years it has been used largely for bulbs in bowls, and may be obtained from seedsmen, or from the British and Foreign Fibre Co. (see below).

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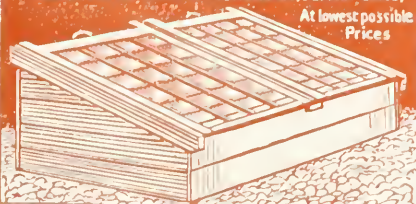
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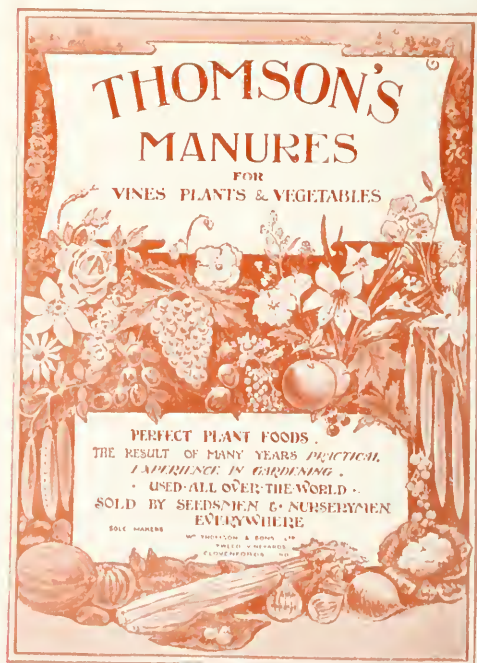


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PRICE 40 --, free on rails.

Stillorgan and Foxrock Horticultural Society's Show.

HELD in the beautiful Leopardstown paddocks (by kind permission of Captain Quin) on 18th ult. The show was a decided success, and the weather conditions perfect. The tea arrangements were ably looked after by Mrs. Maffett. The challenge cup presented by Mr. T. Crozier was awarded to Messrs. Hugh Dickson for their magnificent stand of Roses. Rose classes (24 blooms each)—Mr. F. Miller, as well as the challenge cup presented by Mr. H. E. Richardson. Class 6 blooms—1st prize, Mr. P. Tracey; 2nd, Mrs. Maffett. Twelve blooms Hybrid Teas—Mr. F. Crozier and Mr. F. Miller. Stand for 12 blooms, Teas.—1st, Mr. T. F. Crozier; 2nd, Mr. F. Miller. In the other Rose classes the winners were:—Mr. H. Phipps, Mr. Brown, Mr. Howard Wright, Ramblers—1st, Mrs. George Mitchell; 2nd, Mrs. Talbot Power; and 3rd, Miss A. Barrett. Sweet Pea Classes—(18 bunches) 1st, Miss E. Field, Shankill, who was awarded the challenge cup presented by Mrs. C. H. Maffett; 2nd, A. McNullan; 3rd, Mrs. West. 12 bunches—1st, Mrs. Shuddham, Gorey; 2nd, Mrs. Maffett. Six bunches—1st, Mrs. Ramadge; 2nd, Mrs. Maffett; 3rd, Right Hon. Mr. Justice Kenny. Six bunches (members only)—1st, Mrs. Goodbody; 2nd, Mr. F. N. Hewitt; and 3rd, Mr. H. Wright. Three bunches—1st, Mrs. Maffett; 2nd, Mrs. Ramadge. Six bunches—1st, Mr. A. G. Bradley; 2nd, Mrs. Ramadge. Hardy Cut Flowers—1st, Mrs. G. Mitchell; 2nd, Mrs. J. Talbot Power. Nine bunches—1st, E. C. Hardman, 2nd, Miss E. M. Walker. Six bunches—1st, Sir James Murphy; 2nd, Mrs. Rutherford; 3rd, Mrs. Keith. Six bunches—1st, J. Brown; 2nd, H. Whitton; 3rd, H. J. Simpson. Six bunches—1st, Hon. Judge Bird; 2nd, Mrs. James Talbot Power.



Show Fixtures for 1913

THIS Schedule is designed to assist Societies in selecting dates for their Shows, by indicating what arrangements have already been made. Secretaries will greatly oblige by sending the earliest possible intimation of their fixtures, and of any change which takes place in their arrangements.

Aug.	5th—Navan Show.
„	8th—Portumna Show.
„	13th—Ballinasloe, Co. Galway, Horticultural Society.
„	14th—Banbridge Horticultural Society.
„	14th—Killarney.
„	15th—Naas District.
„	21st, 22nd—Larne Flower Show.
„	26th—R.H.S., Dublin Autumn Show.
September	4th—County Kilkenny Horticultural Show.
„	4th—Newtownards Horticultural Society.
October	2nd—Roscrea Show.
„	22nd, 23rd—R.H.S., Dublin Winter Show.
November	1st—Co. Clare Fruit and Farm Produce Show.
„	11th, 12th—Ulster Horticultural Society Chrysanthemum Show.

ADVANCE BULB OFFER

All the bulbs offered in this advance list are splendidly ripened and of guaranteed quality. They will produce a splendid show of bloom.

English Snowdrops	1/-, 1/6, 2/- per 100
Autumn Crocus Speciosus	2/-, 3/6 per 100
Winter Aconites	2/- per 100
Allium Neapolitanum	2/6 per 100
Freesias, White	2/6, 4/-, 6/-, per 100
Lilium formosanum (fls. Xmas) 6/- per doz.	
Lilium Candidum	2/6 and 3/6 per doz.
Paper White Narcissus	4/- and 5/6 per 100
Duc Van Thol Tulips, Yellow, 6/6; Scarlet, 5/6; Red and Gold 4/-; White Maximus, 3/6 per 100.	

Arum Lily	2/6 per doz., 6 at doz. rate, 25 at 100 rate.
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Carriage paid on orders of 10/- if cash is enclosed. Send your orders **now** and ask for Bees New Catalogue of Bulbs. It is a beautiful production with reproductions in natural colours of bulbs in full bloom from actual colour photos, taken direct from nature. Write for your copy **now**, lest you forget.



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(Over 4,000 sold the first three months.)

SPECIALLY ADAPTED FOR PLANTS IN GREENHOUSES AND CONSERVATORIES. UNEQUALLED FOR STACING POT PLANTS AT FLOWER SHOWS OR EXHIBITIONS : : SLUGS CANNOT CLIMB IT: SPECIALLY SUITABLE FOR ORCHIDS and all pot plants.

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AGENTS WANTED, Kilsreggan,

CHOICE DAFFODILS

ORDER NOW

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Daffodil Nurseries—KIDDERMINSTER

Little's Weed Destroyers



KILLS ALL WEEDS, - - MOSSES, &c.,

On Carriage Drives, Gravel Paths.

Double the strength of most Weed Killers.

1 gallon to 50 gallons water.

1 gallon Drum, 2/6 ... Drum Free.
40 „ Cask, 2/- per gal., Cask Free.

LITTLE'S WEEDOL
Powder Weed Killer

Per 1/9 Tin,
To make 25 Gallons.

Saves Trouble and Expense of Returning Packages.



Morris Little & Son, Ltd. Doncaster

Dublin Wholesale Markets.

THE markets for the past month were well supplied with fruit, flowers and vegetables. Small fruits seem to claim first consideration, for they now occupy most of the space on the salesmen's stands. Throughout the month prices have been good, as the demand always seemed to exceed the supply. Black currants are somewhat scarce this season, with the result that the price of this fruit is much above the average. Strawberries still continue to hold a good price, the result of the fine quality of the fruit. The necessity of grading fruit for market should be borne in mind, otherwise good prices will never be obtained. Early potatoes from home-grown sources were well in evidence, and remunerative prices ruled throughout the month. Vegetables were in abundance, but prices show a slight falling off from the previous month. Broad beans and peas were plentiful and of good quality, but the prices realised for them could not be termed profitable.

In the flower section cut blooms have been plentiful, and, with few exceptions, the supply evidently did not exceed the demand. Of pot plants it would seem that the supply was too limited, as those offered were readily cleared.

PRICE LIST—FRUIT.		From	To
		s. d.	s. d.
Cherries	per peck	3 6	5 0
Currants, Black,	per lb.	0 5	0 6
.. Red	..	0 2½	0 3
.. White	..	0 1	0 6

FRUIT.— <i>con.</i>		From	To
		s. d.	s. d.
Gooseberries	per basket 12 lbs.	2 2	3 6
Grapes, Irish	per lb.	1 4	1 9
Greengages	per ½ bushel	6 6	8 9
Loganberries	per lb.	0 5	0 6
Melons	each	1 9	3 0
Peaches	per doz.	3 0	1 6
Raspberries	per lb.	0 4	0 6
Strawberries			
(dessert)	per lb.	0 7	1 0
(preserving)	..	0 3	0 5½

FLOWERS.			
Chrysanthemum			
max.	per doz. bunches	0 9	1 3
Cornflowers	.. ..	0 8	0 10
Gypsophila	.. ..	2 6	3 0
elegans			
Roses	per doz. blooms	0 6	1 3
Sweet Peas	per doz. bunches	0 9	1 3

VEGETABLES.			
Beans (Broad)	per float	0 8	1 0
Cabbages	per load	7 6	10 6
Carrots	per doz. bunches	0 8	1 0
Cauliflowers	per doz.	2 0	4 6
Cucumbers	per doz.	1 3	2 0
Lettuce	per tray	0 1	0 6
Marrows	per doz.	2 0	3 0
Onions, Tripoli	per bunch	0 7	0 10
Peas	per float	1 6	2 0
Rhubarb	per doz. bundles	2 0	2 6
Tomatoes	per lb.	0 3	0 4

T. B.

Kilkenny Horticultural Society

Open, Amateur
and
Cottagers' Classes

It is proposed to hold

A GYM KHANA
From 3 to 5 o'clock

Ninth Annual Exhibition

OF

FRUIT, FLOWERS, AND

:: VEGETABLES ::

St. James's Park, Kilkenny

ON
Thursday, Sept. 4th
1913

From 1.30 to 6 p.m.

Entries and Fees to be sent to
Miss F. E. BUTLER, Hon. Sec.,
Lavistown House, Kilkenny

Not later than Aug. 30th, 1913

WINDOW GLASS

Polished Plate for Shop Windows.
Horticultural Glass at Lowest Rates

DEATH TO THE WEEDS !

HOYTE'S WEED KILLER.

Strongly Recommended for the Destruction of Weeds, &c.

Price, 2s. per gallon; 5 gallons, 1s. 6d. per gallon;
10 gallons, 1s. 3d. per gallon; Original 40-gallon casks,
1s. per gallon.

HOYTE & SON, The City of Dublin Drug Hall,

17 LOWER SACKVILLE STREET, DUBLIN

Please mention this Paper

'EUREKA' WEED KILLER.

SAVES WEARY WEEDING.

50 gallons of mixed solution will kill all
weeds on 200 square yards of paths, &c.

POWDER.

1/-	tin for 12 galls. solution	} Free Tins and Casks.
1 9	" 25 " "	
6/-	" 100 " "	

LIQUID. 1-50.

1 gallon	- 2/-	- drum free
1 "	- 3/8	- " 9d. extra
2 "	- 6/8	- " 1/6 "
5 "	- 14/-	- " 2/6 "
10 "	- 25/6	- cask 5/- "

'EUREKATINE'—The successful fumigant.
'EUREKA' Insecticide, Lawn Sand, Hellebore Powder, Bordeaux
Mixture, Worm Killer, Hayward's Summer Shade, &c.

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Sons, 32 Upper Sackville St.; S. J. W. Mackey, Ltd., 23 Upper Sackville St.;
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Miscellaneous Section.

THE POPULARITY OF XL ALL SPECIALITIES increases every year. All gardeners proclaim that nothing equals these celebrated preparations.

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XL ALL NICOTINE INSECTICIDE WASH for Syringing, Dipping, and Dressing Fruit Trees and Plants, Mealy Bug, Scale, &c., cannot exist where this is used.

XL ALL INSECTICIDE WASH B (sine Nicotine), best non-poisonous Wash on the Market.

Other Preparations of great renown are **XL ALL WEED KILLER**, "used once a year no weeds can live." **RICHARDS' WORM KILLER** for lawns, non-poisonous. Don't forget to ask your Nurseryman or Seedsman for my small pink list. **G. H. RICHARDS**, Manufacturer, 234 Borough High Street, London, S.E.

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Plans Prepared. Estimates Free.

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Mount Henry Dalkey, Co. Dublin

Develops and Feeds all Plants and Vegetables.

KLEENFEED FERTILIZER

10 Gallons Liquid Manure **1d.** 6 Tablets **8d.** 12 Tablets **1/3**
With full instructions. Like magic. Clean. Handy.
Economical. Effective. Marvellous results.

Also in Powder in Dredgers **1d.**

A PERFECT BOON TO GARDENERS.

Write to-day for **12 Tablets 1/3** Post Free.

Star Chemical Co., Ltd., Wingate Works, Westhoughton

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Rose Trainers, Umbrellas, Trellis for Walls and Lawns, Seats, Arbours, Tubs, Sundials. . . Silver Medal International Exhibition, 1912. Illustrated List on application.

W. Walters & Co., Morland Rd., Croydon ENGLAND.

Fruit Trays, 30 in. by 18 in., **14s.** per dozen.

IF YOU HAVE A GLASS ROOF THAT LEAKS, a Conservatory to repair, or any kind of glazing work to be done, **CARSON'S PLASTINE** will save money, time, worry and annoyance consequent on the use of ordinary putty, which cracks, crumbles, and decays. It saves the expense of constant renewals. Carson's Wood Preservative in green and brown, for Palings, Trellis Work, &c. The best paint for Greenhouses is "Vitrolite." Write for Catalogue. **CARSON'S, 22 Bachelor's Walk, Dublin.**

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Is **CERTAIN DEATH** to Leaf-mining Maggots, Mealy Bug and all Pests infesting plants under glass, &c. Simple to use, no apparatus required. In Boxes to Fumigate 1,000 cubic feet, **6d.**; 10,000 cubic feet, **3s. 6d.** each. Obtained of Seedsman and Florists; if unobtainable apply direct—

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Wholesale Horticultural Sundriesmen,
HACKNEY, LONDON, N.E.

Trade Terms and Catalogue of Sundries upon receipt of business card



KELWAY COLOUR BORDERS are now being planned. Write your requirements to Langport, and Borders of any kind can be arranged for delivery in early autumn, at all prices. State area, &c. Kelway Peonies and Delphiniums should now be ordered for September delivery. "Kelway's Manual of Horticulture," 2s. 6d.; "Gardens of Delight," 9d.; returnable to customers.—**KELWAY & SON**, The Royal Horticulturists, **LANGPORT, SOMERSET.**

KELWAY'S LOVELY GLADIOLI. 2 Gold Medals, 1 Silver-Gilt Flora Medal, 5 Certificates and Awards of Merit for Novelties awarded last week. The present-day Gladiolus is a revelation. **KELWAY & SON** (leading Gladiolus Specialists for 62 years), **LANGPORT, SOMERSET.**

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DUCHESS OF NORMANDY

Card of Commendation, National Rose Society

This lovely new Rose is in every respect (except its colour, which is a soft salmon flesh overlaid with yellow), absolutely identical with the world famous **DEAN HOLE**, and will therefore be indispensable to all exhibitors. Price 2/6 each, 6 for 13/6.

Before ordering, **IT WILL PAY YOU** to write for my Illustrated Catalogue, and for particulars of my cheap

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ALL GOODS DELIVERED CARRIAGE PAID

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THE JERSEY NURSERIES, JERSEY

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Give **BEST** and **Cheapest**.

State quantity of each size required and have "carriage paid" quotation ("carriage" frequently amounts to half value of goods), or write for Price List, free.

SPECIAL POTS of all descriptions. Bulk Pottery and Fern Pots from 2d. each.

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Bulwell Potteries, **NOTTINGHAM.**

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The Richest Plant Food, and the Most Natural Fertiliser.

supplied in Tins and Bags, **6d.** to **20/-**. Carriage paid on quantities of 28 lbs. and upwards.

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Supplied in Tins and Bags, **1/-** to **20/-**. Carriage paid on quantities of 28 lbs. and upwards.

Ask your Seedsman

Sole Proprietors and Manufacturers,

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Agency Depots—Wellington, N.Z.; Durban, S. New York.; Bombay and Muesoorie, India,



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PATENT SYRINGES

Specially Recommended by the
NATIONAL ROSE SOCIETY

The most Economical and Efficient Hand Sprayers
Vary Spray from fine to medium or coarse
Highest Award at R.H.S. Trials : : :

No. 4 (1 x 14). 8 6; No. 5 (1 x 20). 10 6; No. 6 (1 x 20). 14 6.
Bends not included but charged 16 extra

NON-POISONOUS INSECTICIDE

For many years acknowledged to be the World's Best
Pest Destroyer. Safe, Sure, and Reliable Kill for
ALL Garden Pests. : : : :

Used in Royal Gardens, Kew, White
City and Hampton Court Gardens

1 pint. 1-; pint, 16; quart, 2 6; ½ gall. 4-; gall. 7 6

WORM KILLER

The most EFFICACIOUS destroyer of earth-worms
Full particulars and prices of

E. A. White, Ltd., Paddock Wood, Kent
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NURSEYMEN, SEEDSMEN & IRONMONGERS

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ESTABLISHED 1881

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Bulbs and Plants in English, Autumn, 1913, at lowest prices,
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Orders of 10s. and above entirely Free to Destinations in England,
Scotland and Ireland, &c. First Quality guaranteed. Per Per
Some sorts of Bulbs noted out of Price List 100 1,000
HYACINTHS, in the finest mixture for bedding or s. d. s. d.
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HYACINTHS, single, first size, named, in 25 leading sorts, red, white, and blue varieties, equal quantities, my selection	15 8		
TULIPS, single early, in the finest mixture	2 0	18 4	
TULIPS, Darwin, mixed	3 6	30 0	
TULIPS, double, in the finest mixture	2 2	20 0	
ANEMONES, single mixed	1 6	14 6	
ANEMONE, The Bride, pure white	1 6	14 6	
CROCUS, first size, in the finest mixture	1 10	16 4	
CROCUS, second size, in the finest mixture	1 2	10 0	
SCILLA SIBIRICA, rich blue	1 6	14 6	
IRIS, SPANISH, mixed	0 8	5 6	
IRIS, ENGLISH, mixed	2 0	16 8	
NARCIS, single, in the finest mixture	1 4	12 6	
NARCIS, Trumpet, in the finest mixture	2 6	20 0	
NARCIS, double, fine mixture	2 6	20 0	
NARCIS-POLYANTHUS, finest mixed	3 6	30 0	
SNOWDROPS, ELWESI, The Giant Snowdrop	1 6	13 6	
RANUNCULUS, FRENCH, double mixed	0 9	7 0	
SCILLA CAMPANULATA, and Blue Bells	2 0	—	
SCILLA CAMPANULATA, white	2 0	—	
SCILLA CAMPANULATA, mixed	1 6	—	
TRITELEIA UNIFLORA,	1 0	—	

250 Bulbs of same kind will be charged at the 1,000 rate;
25 at the price per 100; 6 at the price per 12.

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MODERN . . . GLASSHOUSES

Superior in Design,
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WOOD LATH AND SCRIM BLINDS

IN EVERY VARIETY

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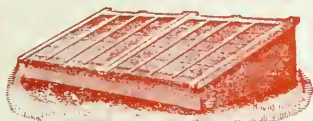
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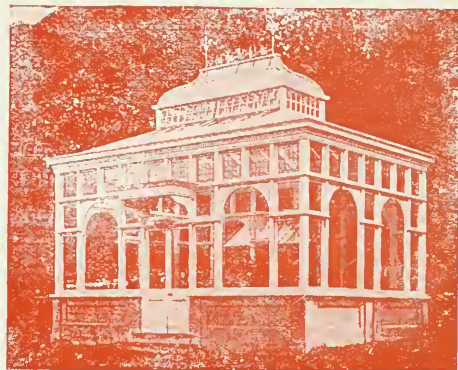
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An ideal seat for beds, balconies, lawns, bowling greens, &c. Being specially constructed for hard wear. Length of seat 4 ft. 6 in., other sizes to order. A favourite with many in the last season. Carriage free on best 15 ft. each, 27 6d. the pair; 2 ft. 27 6d.; 3 ft. 40 - 4 or 2 seats and 1 table, 40 - . All made, planed up, painted three coats, white or green, 25 - each, carriage paid, in English oak, 42 - 2s. each.

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6/- per dozen; 6d. each.

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For cutting backward
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 Cut close

Two widths, 13 1/2 and 9 inches, 12 - . A similar principle for
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 of Gardening Utilities Lists Free

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"ACME" WEED KILLER

For Destroying Weeds, Moss, &c., on Carriage
 Drives, Garden Walks, Roads, &c. ::

POWDER WEED KILLER.

Dissolves quickly in cold water

Size of	No. 1. To make 25 galls.	1 9	postage 3d
Tins	No. 2	50	3 3
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LIQUID WEED KILLERS.

Strength 1 to 25 and 1 to 50. Prices on application

LAWN SAND. Marvellous killing effect on Weeds and Moss.

Fertilises the grass. 7 lb., 1 9; 56 lb., 10 - , carriage paid.

ARSENATE OF LEAD PASTE for destroying all leaf-eating
 insects, such as caterpillars, 8d. per lb.

"FUMERITE," for destroying all ground vermin. To be dug
 into the soil 7 lb., 1 9; 56 lb., 7 6.

EXTRACT OF QUASSIA. Pint, 1 - ; 1 gal., 3 - .

QUASSIA TOBACCO INSECTICIDE. Pint, 13 post free.

Prices and particulars on application.

THE ACME CHEMICAL CO., LTD.
 TONBRIDGE, KENT; and RIVER STREET, BOLTON, LANCs.

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Sent post free on application

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LONDON OFFICE, 27 CANNON ST., E.C.

Works—TOTTENHAM.

'EUREKA' WEED KILLER.

SAVES WEARY WEEDING.

50 gallons of mixed solution will kill all weeds on 200 square yards of paths, &c.

POWDER.

1/-	tin for 12 galls. solution	} Free Tins and Cases.
19	" 25 "	
6/-	" 100 "	

LIQUID.

1/2 gallon	- 2/-	- drum free
1 "	- 3/6	- " 9d. extra
2 "	- 6/6	- " 1/6 "
5 "	- 14/-	- " 2/6 "
10 "	- 25/6	- cask 5/- "



'EUREKATINE'—The successful fumigant.

'EUREKA' Insecticide, Lawn Sand, Hellebore Powder, Bordeaux Mixture, Worm Killer, Hayward's Summer Shade, &c.

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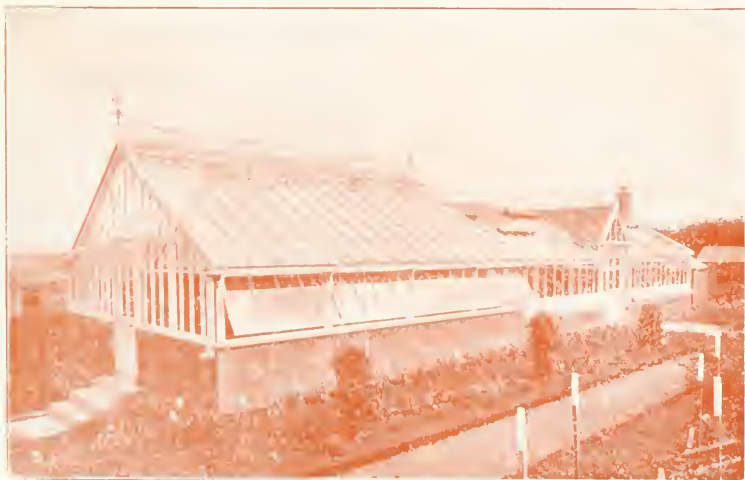
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SPECIALISTS IN THE MANUFACTURE OF
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DARLINGTON



ERECTED FOR W. BROWN, ESQ., LARNE, CO. ANTRIM (Note the Parisian
Wood Lath Blinds on roof)

THE REASON WHY customers come to us for Glasshouses and Heating Apparatus, is because they know they will get the **best value for the least possible expenditure.** A few of our customers in Ireland include the Duke of Leinster, the Right Hon. Chief Baron Pilles, The Marquess Conyngham, The Marquesses of Headfort, Londonderry; Earl Fitzwilliam, the Earls of Donoughmore, Dunraven, Erne, Longford, Listowel, Ross, Aberdeen; Lords Ardilaun, Barrymore, Castletown, Cloncurry, Dunleath, Farnham, Lady Maurice FitzGerald; Colonel the Hon. C. F. Crichton. H. P. Goodbody, Esq., &c., &c.

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BULBS, BOWLS, AND BULBOLIN

NOW READY. MACKEY'S NEW CATALOGUE

BEAUTIFUL BULBS

FOR

GARDEN AND GREENHOUSE

BULBS FOR BOWLS AND POTS

BULBS FOR BEDS AND BORDERS

BULBS FOR NATURALISING ::

The best Bulbs for each purpose, illustrated and described,
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BULBOLIN THE BEST COMPOST :: FOR BULBS IN BOWLS

A PRONOUNCED SUCCESS

Always sweet, pleasant to handle, immediately ready for use—requiring no previous manipulation; grows Bulbs to perfection in Bowls or other Receptacles without drainage. For particulars see our

NEW CATALOGUE

BOWLS FOR BULBS

IN GREAT VARIETY

SIR JAMES W. MACKEY, LTD.

SEEDSMEN AND NURSERYMEN

23 Upper Sackville Street ————— DUBLIN

FOUNDED 1777.

Correspondence.

My excellent neighbours, the Misses Orme, had a wonderful plant of *Myosotis antarctica* this year: it did not flower in 1912 and carried on to 1913, and was a mass of yellow. Enclosed their photo. The ruler is a foot rule. Can you reproduce it in your paper?

With me it has been three years an annual seeding freely. At Knapton it has carried on for two years I think. We have neither of us had anything like Miss Orme's specimen.

Blandsfort, Abbeyleix.

HUM BLAND.

[Unfortunately the photograph would not make a good reproduction, but it shows an extremely fine specimen of this rare yellow Forget-me-Not, apparently more than 2 feet through—ED]

HORTICULTURAL SHOWS.

It is to be regretted that the secretaries of various counties do not communicate with each other before finally fixing dates of their respective shows, and thereby obviate, or at least diminish, clashing, rendering the attendance of nurserymen impossible or very onerous.

July 30 was selected by half dozen societies—Emmiscothy, Kingstown, and others—and August 15th, Naas and Nenagh, and so on.

The trade exhibits are a feature of most shows, why not therefore facilitate its support? If all the various societies were affiliated with R. H. S., Dublin, it would simplify to this end.—Yours, Delgany

PENNICK & CO.

VIOLA CORNUTA PAPILIO HYBRID.

I HAVE flowering in my garden a *Viola* which I can only conjecture must be a hybrid between *V. cornuta Papilio* and *V. bosniaca*.

V. cornuta Papilio seeds all over the garden, but varies very little indeed, all the flowers being

of a soft lavender-blue, and in three years I have never seen any marked variation from this colour.

The new plant, however, whilst retaining the attractive shape of *V. cornuta Papilio*, has flowers of a beautiful reddish purple, very clear and brilliant.

The only other *Viola* I had in flower last year likely to give such a colour was *V. bosniaca*, and this seedling is growing only about two yards from where *V. bosniaca* was growing.

It will I think be a very attractive plant when larger, but like all the cornutas is a little straggling in habit.

Lissadell catalogue a hybrid of *V. bosniaca* and *V. cornuta* presumably the type, but I have not seen it yet. E. B. ANDERSON, Sandymount.

Catalogues.

DRUMMOND'S FLOWER BULBS FOR 1913.—This catalogue is of good type and contains many excellent illustrations, while the cultural details given to each subject will help the beginner. There are good lists of named varieties of Hyacinths given in their colours, early Tulips for forcing, gorgeous coloured parrots, and the beautiful Cottage Tulips, followed by the handsome Darwins. Daffodils of many kinds find a place, then some of the smaller bulbs, as Crocus, Snowdrops, Scillas, and many other miscellaneous bulbs and tubers. Fruit trees, strawberries, culinary roots and garden sundries are given towards the end of the catalogue. Illustrations of various types of bulb bowls appear, and Messrs. Drummond give the following instructions for bulb culture in bowls: The fibre must be damped before filling the bowl, as uniformity of moisture is necessary. Sufficient damped fibre should be placed in the bowl to bring the top of the bulbs, when placed upon it, about level with

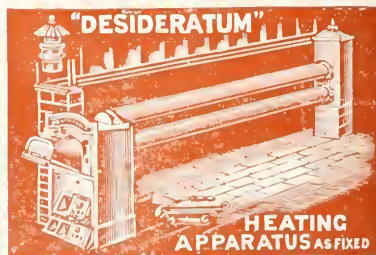
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Desideratum Heating Apparatus

Has proved, by long tried experience, that it cannot be beaten for heating small green-houses. It is easily worked, is economical in fuel, and is perfectly efficient. Hundreds are sold every season, because it always gives satisfaction.

Illustrated Price List on application
Series I.C

Estimates free on receipt of full particulars



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STOURBRIDGE

Perpetual Flowering Carnations.

Plant now in the open border for a continuous display of bloom our hardy Perpetual Carnations Collection No. 9 of 12 Extra Strong Plants, in pots, including Novelties, 9/-, carriage paid for cash with order.

Write for our Catalogue, free. Read our Cultural Treatise, 1/-

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NEW, RARE AND CHOICE HARDY FLOWERS FROM SEEDS

The Herbaceous Border and Rockery are now the most attractive feature of the garden, and no garden is complete without a fair collection of hardy plants. The raising of these beautiful plants from seeds is at once most interesting and economical. Keen and up-to-date amateurs should get

**THOMPSON & MORGAN'S
58th ANNUAL SEED CATALOGUE**

which they will find of immense value and interest

CARR STREET

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NICOTICIDE

(FUMIGANT)

		cubic ft. each—s.	d.
No. 1	size Tin—1 pt. contains sufficient for	40,000	15 0
No. 2	size Tin— $\frac{1}{2}$ pint	20,000	7 6
No. 3	size Bot.—6 oz.	12,000	4 6
No. 4	size Bot.—4 oz.	8,000	3 0
No. 4 $\frac{1}{2}$	size Bot.—2 oz., new size	4,000	1 8
No. 5	size Bot.—2 oz., "sample"	2,000	0 10

CARRIAGE PAID

Fumigating Lamps

1s. each, for 5,000 cubic feet

Nicotide Plant Spray

$\frac{1}{2}$ -pint 1/2 Pint 2/-

Quart 3/6 $\frac{1}{2}$ -gal. 5/-

Gallon 10/- Carriage Paid

GOW'S LAWN SAND

DAISY ERADICATOR

28 lbs. (to dress 100 square yds.) 6/6.
 $\frac{1}{2}$ -cwt. 11/-, 1 cwt. keg 21/-



Carriage Paid

GOW'S LIQUID WEED KILLER

1 gallon, to make 51 gallons, in solution . . . 3/6

5 " " Drums Free " Carriage Paid . . . 16/-

Use Gow's Tobacco Powder and Quassia Extract
6d., 1/- and 2/6, decorated tins.

GOW'S SLUG DESTROYER And Combined

28 lbs. 4/6 $\frac{1}{2}$ -cwt. 7/6 1 cwt. 11/6

All Carriage Paid Sample Tins, 6d and 1/-
In Decorated Tins.

ASK YOUR SEEDSMEN AND NURSERYMEN FOR IT.

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THE CHEAPEST INSECTICIDE OF THE DAY

"NIQUAS"

(NON-POISONOUS)

IMPROVED

A Concentrated Extract of Quassia, combined with other valuable ingredients, forming a cheap, safe, and effective Insecticide for syringing and dipping. It destroys all Insect Pests infesting Trees and Plants, whilst no possible injury to vegetation can result from its use. It can be applied with syringe or pump, or used for dipping.

PRICES—Half-pint, 1/-; pint, 1/6; quart, 2/6; half-gallon, 4/-; gallon, 7/6; five gallons, 25/-; ten gallons, 40/-
1 gallon sufficient for 80 gallons of water.

STANDEN'S MANURE

(Established over 35 Years)

Exceeds all others in General Fertilising Properties and Staying Powers

Analysis on Application

Sold in Tins, 1/-, 2/6, 5/6 each; and in Kegs, well secured, to prevent loss through exposure, 28 lbs., 7/6; 56 lbs., 12/6; 112 lbs., 20/-

CORRY'S SPECIAL

Chrysanthemum Manure

Sold in Tins, 1/-, 2/6, 5/6, and Bags, $\frac{1}{2}$ cwt., 10/6; $\frac{1}{2}$ cwt., 18/-;
1 cwt., 32/-

For Fumigating in Greenhouses.

"LETHORION"

Improved Metal Cones

Registered No. 62,597

To destroy Insect Pests. The Candle attached to each Cone only needs lighting, and there is no further trouble. They are most efficacious.

No. 1, for small frames of 100 to 600 cubic feet, 6d. each; Cone No. 2, 8d. each, 1,000 to 1,200 cubic feet; No. 3, 1/- each, 2,000 to 2,500 cubic feet.

Fowler's Lawn Sand

This preparation is for destroying Daisies and other weeds on lawns, and at the same time stimulating the growth of the grass. If one tin is tried as a sample, its value will be at once appreciated. Sales are largely increasing.

Tins, 1/-, 2/6, and 5/- each; Kegs, $\frac{1}{2}$ cwt., 8/6; $\frac{1}{2}$ cwt., 16/-;
1 cwt., 30/-

ELLIOTT'S

'Summer Cloud' Shading

Registered Trade Mark No. 14,629.

(The only genuine original and improved article)

For Greenhouses. A pleasant green shade is given to the glass.

In packets, 1/- for 100 feet of glass, and 2/6 each for 300 feet.

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G. HAYWARD F.R.H.S.

CRYSTAL PALACE HORTICULTURAL WORKS

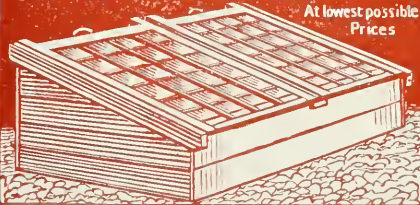
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THIS TWO-LIGHT FRAME made to standard size 6 ft. by 4 ft. Best materials, painted two coats, glazed with 21 oz. glass, ready for use.
PRICE 40/-. free on rails.

the edge, placing the bulbs nearly touching each other, then fill up with sufficient fibre to cover the bulbs. When planted, water thoroughly; drain off any surplus water, placing the bowl in a dark place to promote root action. When the growth begins to show above the fibre, remove gradually to the light, being careful to see that the fibre is neither too dry or sodden.

BEST GUARANTEED BULBS FOR 1913.—This is a most interesting catalogue of a handy size full of many good things. In it will be found all our old favourites—Tulips, Daffodils, Hyacinths, &c., while we note something new in Hyacinths, by a special process which the bulbs have undergone. If potted up immediately the large Hyacinths can be obtained in flower by Christmas or before, to group with or take the place of the Roman Hyacinths. We are pleased to see hardy autumn-flowering bulbs are grouped together and receive special notice, for Colchicums, Belladonna Lilies, Crocus speciosus, &c., give welcome colour in September and October. This list is one which should be perused by all those having a garden, for it is full of attractive illustrations of graphic descriptions of both bulbs and roots, many of which are not commonly seen in gardens. Coloured plates on the covers give one an idea of the colour of some of the Tulips, Hyacinths and Irises.

MESSRS. EDMONDSON BROS. send a copy of their Bulbs and Flower Roots for Autumn, 1913, with an enclosure dealing with the cultivation of bulbs in ornamental bowls, art pots, and vases without drainage. This method is particularly suited to the amateur without a greenhouse, for it enables him to have a display of flowers over the greater part of the winter months. Providing he attends to the directions which are given and buys good

strong flowering bulbs, he is well on the road to success. A list of the varieties of Tulips and Narcissus which readily succeed in fibre is given, also other pretty bulbs, like grape Hyacinths, Fritallaria, Scillas, &c. The catalogue is well printed and illustrated, and of a handy size, and deals with all the best and most popular bulbs and roots for present planting: Daffodils, Tulips, Irises, Hyacinths in many varieties; pink Spireas, and Lilies and other roots for forcing, while garden sundries find a place at the end.

BEAUTIFUL BULBS FOR GARDEN AND GREENHOUSE FROM SIR J. W. MACKEY, LTD.—This catalogue for 1913 has been altered and improved, many fresh and beautiful illustrations added to it. The first illustration shows a pretty group of bulbs and ferns grown in Bulbodin in bowls, Hyacinths, Narcissus, Scilla and Tritelia uniflora; by the way this little bulb is one which should be more frequently seen in gardens, for it remains in flower nearly the whole summer. The illustrations of the autumn-flowering Crocus speciosus and longiflorus are particularly good; there always seem a refinement about the flowers of some of the species which is lacking in larger flowers of their garden brethren. Good lists are given of all the well-known bulbs and tubers, while popular collections are made up, so that those who wish to have a gay garden in spring will do well to send for a copy; cultural hints and some interesting notes are given with each genus.

WEBBS' BULBS FOR 1913, FROM MESSRS. WEBB, Wordsley, Stourbridge.—The first illustrations show fields of bulbs in Holland, where their firm grows their bulbs. Letters from customers testify to the good quality of their flowers for forcing with which the list first deals. Long lists

SUTTON'S BULBS .



.. Send for a copy of ..

Sutton's Bulb Catalogue for 1913

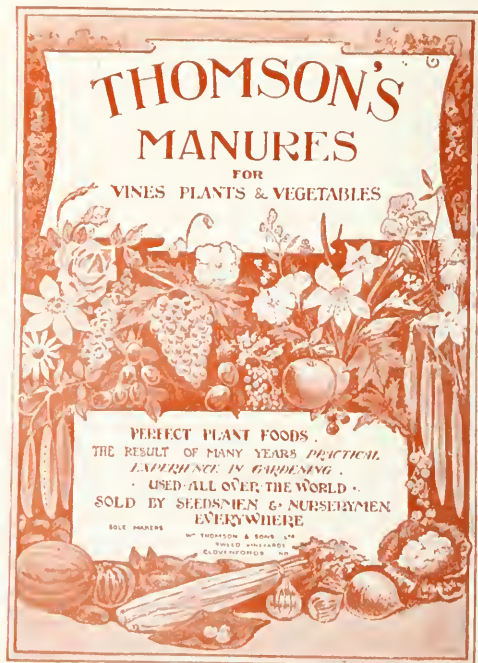
Containing Complete Lists and full descriptions of all the best varieties of

Hyacinths, Tulips, Narcissi, &c.

POST FREE

SUTTON & SONS

THE KING'S SEEDSMEN
READING



of named Hyacinths follow, those sorts suited for exhibition being marked. Their culture in both pots and glasses is described in a clear way. Tulips and Daffodils in many varieties are given. Gladioli, Iris, Lilies, and other well-known bulbs are interspersed with others rarely seen, but not the less pretty. A feature is made of popular collections of bulbs: these are very good value, and are made to suit all pockets. Towards the end are seeds or autumn sowing, lists of climbing and also herbaceous plants.

A most useful 1913 BULB CATALOGUE comes from MESSRS. S. M'GREDDY & SON, Portadown, who rightly remind their customers that early planting gives the best results. Bulbs are sound and healthy this year, and with ordinary care should give a wealth of bloom. The list opens with an account of how to grow bulbs in ornamental vases in fibre, giving names of bulbs which do well with this treatment. Then bulbs for early potting are quoted, such as Freesias, Lilium, Harrisii, Roman Hyacinths, and Retarded Bulbs and Roots. The general list of bulbs is a full one, containing good varieties of the best known bulbs, and also quite a number which would be desirable introductions to many gardens. On page 27 is a very useful list of bulbs classified according to their use in the garden such as for bedding, cut blooms, forcing, rockery, border, &c. Hints on planting Roses are followed by short select lists of varieties, hardy perennials and hardy climbing plants.

PERFECT PERENNIAL PLANTS

are enumerated by the hundred in **Bees New Plant Catalogue**. The exquisite loveliness of some of the more recent introductions cannot adequately be described. All that is best in the hardy plant world has been collected, and listed, to enable **you** to have a garden always in bloom. **Bees Hardy Perennials** produce the most gorgeous colour effects, possible, while the ease with which they can be grown renders them indispensable, particularly in small gardens. The wealth of bloom they produce cannot be equalled, either for cutting or garden decoration. If you desire your garden to be always attractive write **NOW** for **Bees New Plant Catalogue**. It contains illustrations of flowers in natural colours from original colour photographs, besides a mine of information that cannot fail to help you. It will be issued early in September, so write for copy **NOW**, lest you forget



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PURE COCOANUT FIBRE

FOR STRIKING, POTTING,
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Nurserymen, Florists, Corn Dealers, Oilmen, &c.

CHOICE DAFFODILS

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Full Descriptive and Illustrated Catalogue of all the best varieties for Exhibition, Garden, Rock Garden and Pots. Now Ready

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KILLS ALL WEEDS, - - MOSSES, &c.,

On Carriage Drives, Gravel Paths.

Double the strength of most Weed Killers.

1 gallon to 50 gallons water.

1 gallon Drum, 2/6 ... Drum Free.
40 ,, Cask, 2/- per gal., Cask Free.

LITTLE'S WEEDOL
Powder Weed Killer

Per 1/9 Tin,
To make 25 Gallons.

Saves Trouble and Expense of Returning Packages.



Morris Little & Son, Ltd., Doncaster

Show Fixtures for 1913

THIS Schedule is designed to assist Societies in selecting dates for their Shows, by indicating what arrangements have already been made. Secretaries will greatly oblige by sending the earliest possible intimation of their fixtures, and of any change which takes place in their arrangements.

September 4th—County Kilkenny Horticultural Show.
 " 11th—Newtownards Horticultural Society.
 October 2nd—Roscrea Show.
 " 22nd, 23rd—R.H.S., Dublin Winter Show.
 November 1st—Co. Clare Fruit and Farm Produce Show.
 " 11th, 12th—Ulster Horticultural Society Chrysanthemum Show.

Dublin Wholesale Markets.

THE exceptionally fine weather which has prevailed during the past month has had a great influence on the markets. With such unfavourable conditions for plant growth one cannot wonder at the poor quality of garden produce sent to the markets. A rather remarkable feature of this fruit season, which has now practically drawn to a close, was the small quantity in which soft fruits were marketed. The choicest fruits—melons, peaches, and plums—were well in evidence and were disposed of at remunerative prices. Irish apples are now being marketed in small quantities, consisting chiefly of thinnings of the larger cooking varieties. The supply of grapes has been somewhat limited, and this was principally produce of the South of England.

Cut flowers were not so plentiful as might have been expected; but doubtless the drought has caused a great deal of injury to this trade. Roses, Sweet Peas, hardy and half-hardy Annuals, &c., were selling at fair prices.

That the dry weather has done a great deal of harm to vegetable growers is plainly seen by the very poor quality of peas, onions, cabbages and cauliflowers sent to the markets daily. Indeed everything seems to have suffered from drought:

while most crops have fallen a prey to the fungal and insect pests of the garden.

PRICE LIST—FRUIT.		From	To
		s. d.	s. d.
Cherries	per peck	3 0	4 6
Currants, Black	per lb.	0 4	0 5
" Red	"	0 3	—
Gooseberries	per basket 10 lbs.	1 9	2 0
Grapes, Irish	per lb.	1 0	1 1
Melons	each	1 4	2 6
Peaches	per dozen	5 0	8 6
Plums	per half bushel	4 6	6 0
Pears	per dozen	1 0	1 8

FLOWERS.			
Asters	per doz. bunches	1 0	1 4
Carnations	per doz. blooms	0 6	0 10
Gladiolus	per doz. spikes	1 8	2 0
Roses	per doz. blooms	0 4	0 10
Sweet Peas	per doz. bunches	1 0	1 6
Stocks	per bunch	0 4	0 6

VEGETABLES.			
Artichokes, Globe	per doz. heads	0 9	1 3
Beans, Broad	per float	1 0	1 6
" French	per basket 10 lbs.	0 9	1 0
Cauliflowers	per dozen	2 0	3 6
Cabbages, York	per load	10 0	18 0
Carrots	per doz. bunches	0 8	1 0
Cucumbers	per dozen	1 0	1 9
Lettuce	per tray	0 4	0 6
Mint	per doz. bunches	1 0	1 6
Onions, Tripoli	per bunch	0 6	0 10
Parsley	per tray	0 4	0 6
Peas	per float	1 0	1 6
Rhubarb	per doz. bunches	2 0	2 6
Spinach	per tray	0 6	0 9
Tomatoes	per lb.	0 3	0 5
Turnips, White	per bunch	0 3	0 8

T. B.

WINDOW GLASS

Polished Plate for Shop Windows.
 Horticultural Glass at Lowest Rates

DEATH TO THE WEEDS !

HOYTE'S WEED KILLER.

Strongly Recommended for the Destruction of Weeds, &c.

Price, 2s. per gallon; 5 gallons, 1s. 6d. per gallon; 10 gallons, 1s. 3d. per gallon; Original 40-gallon casks, 1s. per gallon.

HOYTE & SON, The City of Dublin Drug Hall,
 17 LOWER SACKVILLE STREET, DUBLIN
 Please mention this Paper

BULBS

CLASSIFIED as suitable for FORCING.
 BEDDING, CUT BLOOM, HERBACEOUS
 BORDER, MOSS FIBRE, and ROCKERY
 The most useful list published.
 Send for it Post Free.

SAMUEL MCGREDY & SON
 The Royal Nursery and Seed Establishment
 PORTADOWN — IRELAND

DUTCH BULBS

SINGLE TULIPS		1,900
SPLENDID MIXTURE	..	6/0
LA REINE	..	9/0
ROSE GRIS DE LIN	..	16/0
SCARLET DUC	..	25/0
ARTUS	..	10/0
L'IMMACULEE	..	10/0
WHITE SWAN	..	10/0
YELLOW PRINCE	..	12/0

SINGLE NARCISSUS		1,000
ORNATUS, Double Nosed	..	10/0
" Round	..	6/0
GOLDEN SPUR, Round	..	20/0
VICTORIA	..	16/0
BARRI CONSP.	..	7/0
EMPEROR	..	20/0
PRINCEPS	..	10/0
CAMPANELLS	..	10/0

Cash with Order. Packing Free. 5% discount for 10,000 of one variety.

ALKEMADE & CO., Noordwijk, HOLLAND

Miscellaneous Section.

THE POPULARITY OF XL ALL SPECIALITIES increases every year. All gardeners proclaim that nothing equals these celebrated preparations.

XL ALL NICOTINE VAPORISING COMPOUND, the gardeners' favourite Fumigant, both Liquid and Cake.

XL ALL NICOTINE INSECTICIDE WASH for Syringing, Dipping, and Dressing Fruit Trees and Plants. Mealy Bug, Scale, &c., cannot exist where this is used.

XL ALL INSECTICIDE WASH B (sine Nicotine), best non-poisonous Wash on the Market.

Other Preparations of great renown are XL ALL WEED KILLER, "used once a year no weeds can live." RICHARDS' WORM KILLER for lawns, non-poisonous. Don't forget to ask your Nurseryman or Seedsman for my small pink list. G. H. RICHARDS, Manufacturer, 234 Borough High Street, London, S.E.

LANDSCAPE GARDENING

DESIGNING, Laying out and Planting of New and Renovating of Old Gardens. The Making and Planting of Rock Gardens, Rockeries, Water and Bog Gardens, and Pergolas a Speciality.

Plans Prepared. Estimates Free.

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Develops and Feeds all Plants and Vegetables.

KLEENFEED FERTILIZER

10 Gallons Liquid Manure 1d. 6 Tablets 8d. 12 Tablets 1 3
With full instructions. Like magic. Clean. Handy.
Economical. Effective. Marvellous results.

Also in Powder in Dredgers 1d.

A PERFECT BOON TO GARDENERS

Write to-day for 12 Tablets 1 3 Post Free.

Star Chemical Co., Ltd., Wingate Works, Westhoughton

GARDEN APPLIANCES

Rose-Trainers, Umbrellas, Trellis for Walls and Lawns, Seats, Arbours, Tables, Sundials. Silver Medal International Exhibition, 1912. Illustrated List on application.

W. Walters & Co., Morland Rd., Croydon
ENGLAND.

Fruit Trays, 30 in. by 18 in., 14s. per dozen.

IF YOU HAVE A GLASS ROOF THAT LEAKS, a Conservatory to repair, or any kind of glazing work to be done, CARSON'S PLASTINE will save money, time, worry and annoyance consequent on the use of ordinary putty, which cracks, crumbles, and decays. It saves the expense of constant renewals. Carson's Wood Preservative in green and brown, for Palings, Trellis Work, &c. The best paint for Greenhouses is "Vitrolite." Write for Catalogue. CARSON'S, 22 Bachelor's Walk, Dublin.

AUTO-SHREDS IS CERTAIN DEATH to Leaf-mining Maggots, Mealy Bug and all Pests infesting plants under glass, &c. Simple to use, no apparatus required. In Boxes to fumigate 1,000 cubic feet, 6d.; 10,000 cubic feet, 3s. 6d. each. Obtained of Seedsman and Florists; if unobtainable apply direct—

WM. DARLINGTON & SONS,
Wholesale Horticultural Sundriesmen.
HACKNEY, LONDON, N.E.

Trade Terms and Catalogue of Sundries upon receipt of business card



KELWAY COLOUR BORDERS are now being planned, and planted. Write your requirements to Langport, and Borders of any kind can be arranged for delivery in early autumn, at all prices. State arca, &c. Kelway Paeonies and Delphiniums should now be ordered for September delivery. "Kelway's Manual of Horticulture," 2s. 6d.; "Gardens of Delight," 9d.; returnable to customers.—KELWAY & SON, The Royal Horticulturists, LANGPORT, SOMERSET.

NEW JERSEY HYBRID TEA ROSE DUCHESS OF NORMANDY

Card of Commendation, National Rose Society

This lovely new Rose is in every respect, except its colour, which is a soft salmon flesh overlaid with yellow, absolutely identical with the world famous DEAN HOLE, and will therefore be indispensable to all exhibitors. Price 2/6 each, 6 for 14/6.

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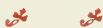
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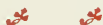
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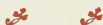


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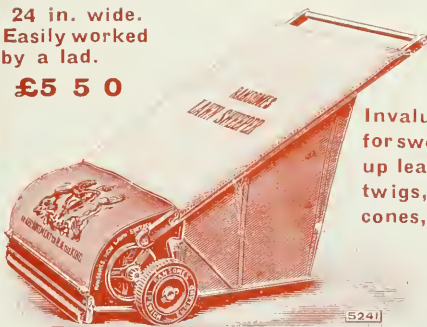
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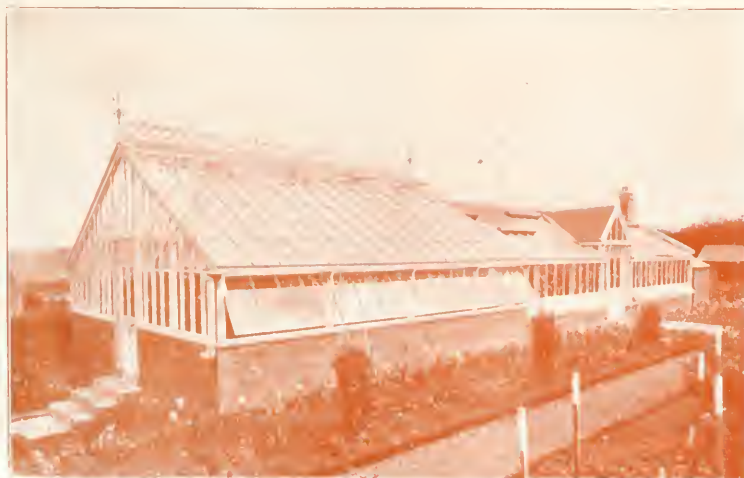
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Royal Horticultural Society.

THE monthly meeting of the Council was held at the Society's offices, 5 Molesworth Street, Dublin, on the 12th ult., Alderman Bewley presiding. A balance sheet of the recently held Autumn Show was submitted and approved, and the Council noted with satisfaction the advance made both in the quantity and quality of the exhibits, and largely increased public attendance. Accounts in connection with the show, including the prize list, were ordered for payment. The principal business transacted was that in connection with the forthcoming Winter Exhibition, for which judges were nominated in the various sections, and a sub-committee appointed to confer with the Department of Agriculture to make final arrangements in connection with the Fruit Conference and fruit packing demonstration to be held in connection with the show. Prices of admission were fixed at 1s. from 1.30 till 9.30 on the first day of the show, and at 6d. from 10 a.m. on the second day till 5 p.m., when the show closes. Mr. J. G. O'Brien, Lakeland, Fethard, Co. Tipperary, was elected an annual member and Mr. J. G. Toner, Horticultural Instructor, Monaghan, a practical member of the society.

Correspondence.

DEAR SIR, Some of the Roses recommended in Dr. O'Donel Browne's article "Bedding Roses" are useless to the non-exhibiting amateur, and will only cause him disappointment if he invests in them.

In a list of the worst garden Roses, compiled from the votes of growers and published in a contemporary, are included at least two of these

lauded by Dr. O'Donel Browne—namely, Killarney and Dean Hole. A plant of the latter here has not succeeded in fully opening one flower in three years. Killarney is not so bad, but it is very susceptible to the attacks of mildew and is also very easily injured by rain. La France here is seldom good, although, in such a dry year as this, it does something to justify its inclusion in the garden. Both Liberty and Richmond are lovely flowers, but with me they are too weak growers to be of any use for bedding. White Maman Cochet and Souvenir de S. A. Prince are spoiled by a heavy dew. Despite their awful names Commandant Felix Faure and Commander Jules Gravereaux are better than Capt. Hayward and Senateur Vaisse. General MacArthur is, to my mind, a long way the best of the red bedding Roses. The General is not in the Dr.'s list, but he may be in good company, for that best of all bedding Roses, Caroline Testout, is also absent.

H. P. BRIDGE, Jr.

Racket Hall, Roscrea, Sept. 22, 1913.

Catalogues.

MESSRS. ALEX. DICKSON, of Belfast and Dublin, send a catalogue of their "Hawthorn" Bulbs for 1913. Everyone nowadays seems to be growing bulbs in bowls for house decoration, and the front pages tell us how to be successful in this fascinating pursuit. The catalogue is well illustrated, and contains a large collection of bulbs and roots for present planting, and also bulbous and tuberous-rooted plants for the greenhouse. Spanish and English Irises ought to be

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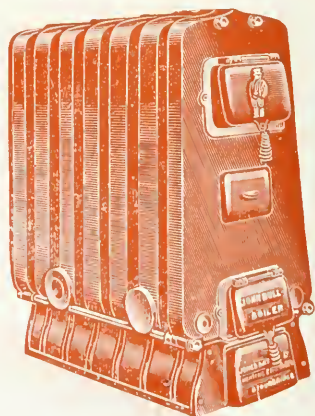
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largely planted now, for they are very cheap and exceedingly useful for cutting. Japanese and Siberian Iris with *Iris Susiana*, *stylosa*, *reticulata*, also find a place among everything that is good. This well-known firm makes a feature of Cottage and Darwin Tulips, and their flowers staged at the leading London shows are always a feature, and have been awarded 6 Silver Cups and 18 Gold Medals. Successes like these mean a large collection and fine flowers, and to produce good flowers one must have good strong bulbs.

MESSRS. ANT. ROOZEN & SON, Overveen, near Haarlem, send a copy of their 1913 Catalogue of Bulbs and Roots. Collections of bulbs are offered both for the garden and for the greenhouse which give very good value, a novelty list of plants and bulbs follows, where many good plants are quoted. There are long lists of the named varieties of Hyacinths, Tulips and Narcissi which this old-established Dutch firm grows on a very large scale, and cultural hints are given to these and the most important plants throughout this large and comprehensive list. Iris, Lilies, Ranunculus and all the popular bulbs are offered, while there are rarities which are seldom seen in gardens. Towards the end is a list of climbers and a good selection of hardy herbaceous plants. The catalogue may be obtained post free on application to the London agents, Messrs. Mertens & Co., 3 Cross Lane, St. Mary-at-Hill, London, E.C.

MR. T. SMITH, of Newry, sends his list of hardy bulbs, tubers, corms, &c., and as usual it is full of interest to the gardener and flower lover. Very full lists are given of the best varieties of the more popular lines, such as Tulips, Daffodils, Crocuses, &c. The great value of the Newry

list however lies in the admirable selection of species and genera not listed by those who cater only for a spring display. The list of Crocus species, for instance, includes numerous kinds for spring, autumn and winter flowering, and likewise many gems for the border and rockery are to be found among the species of Tulips. A choice collection of Irises contains many fine things, while Snowdrops, Aconites, Lilliums, Erythroniums, and many another are there to tempt the enthusiast and fill his garden with beauty at all seasons. We notice Mr. Smith recommends *Chionodoxa* for grass, but hitherto any attempt to utilise them in this way has not seemed to us an unqualified success.

Reviews.

Bulbs and their Cultivation *

During the autumn tons of bulbs imported from Holland, to say nothing of the immense number grown in the home area, will be distributed to growers in all parts of the country. Many from long experience will know how to grow these to perfection; thousands of others will not. Hence, the second edition of Mr. Sanders' popular work comes out at a timely moment, and can be thoroughly recommended, not only to those who need advice, but also to others, as a valuable work of reference. The book has all the qualities we have learned to expect from Mr. Sanders and the publishers; it is thoroughly practical, brief, but pointed in its advice, well printed, and beautifully

* "Bulbs and their Cultivation." By T. W. Sanders, F.L.S., editor of "Amateur Gardening." (London: "Amateur Gardening" Offices, 148 and 149 Aldersgate Street, E.C. Cloth, 204 pages, 32 full-page plates and other illustrations. 2s. 6d. net).

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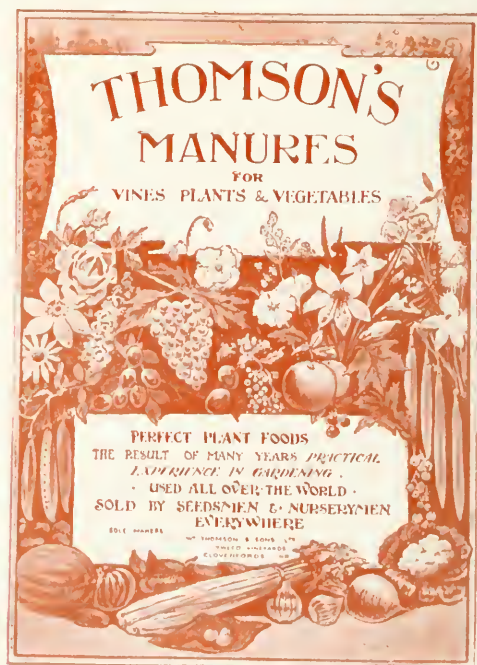
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illustrated. Information is given as to the correct time for planting, soil, position, depth and distance apart, time of flowering, height, lifting, storing, and pests and diseases. There are very full and instructive chapters on bulb culture in fancy bowls for room decoration, in hot-houses, in warm, cool, and cold greenhouses, and in window-boxes, as well as hints on forcing. The author also gives reliable selections of varieties for all purposes, the common names, and a glossary of terms. Indeed, the ever-increasing army of amateur gardeners will find herein all that they require to know about the bulb and its proper cultivation, and we have no hesitation in heartily recommending the book to all desirous of indulging in a new pleasure or improving one already enjoyed.

The Garden Manual.*

A NEW and revised edition of our old friend has come to hand, something like twenty years having elapsed since the last edition went forth to help and instruct the young gardener and amateur. Fifty thousand copies of the 1893 edition, we are told, found their way into the hands of gardeners. Many changes have taken place during these years; gardening has increased immensely in scope and popularity, and the new edition is correspondingly enlarged and improved, so that we safely predict an enormously increased demand.

Leading off with a brief *résumé* of the history of gardening, the reader is thereafter treated to expert advice in all the essential operations and

* "The Garden Manual." Published at the Office of the *Journal of Horticulture*, 10 Essex Street, W.C. Price 2s. 6d. net; 2s. 10d. post free.

methods employed in gardening in the fullest sense of the word. In their turn the kitchen garden, flower garden, Alpine garden and fruit garden are dealt with in detail, situation, formation, draining and subsequent furnishing and general upkeep receive attention.

Excellent are the chapters devoted to the indoor garden and trees and shrubs. Splendid lists of plants for all purposes are set forth under each heading, while special notes occur on plant houses and heating, manures and their uses, spraying and insecticides and fungicides, especially with reference to fruit culture.

In a future edition we would be glad to see a section devoted to public parks and botanic gardens, not so much with reference to the cultivation of plants as in general management.

The work is profusely illustrated, many of the illustrations being good.

Show Fixtures for 1913

THIS Schedule is designed to assist Societies in selecting dates for their Shows, by indicating what arrangements have already been made. Secretaries will greatly oblige by sending the earliest possible intimation of their fixtures, and of any change which takes place in their arrangements.

October 2nd—Roserea Show.

" 22nd, 23rd—R.H.S., Dublin Winter Show.

November 1st—Co. Clare Fruit and Farm Produce Show.

" 11th, 12th—Ulster Horticultural Society Chrysanthemum Show.

DICKSON'S HAWLMARK BULBS

Hyacinths, "The Royal Twelve" Exhibition Varieties, 6 6 ::

" "The Popular Twelve" First size bulbs, 4/- ::

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Narcissus, Crocus, Snowdrops, Lilies and other choice bulbs

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Dublin Wholesale Markets.

OWING to the strike, which is now reaching a critical situation, market produce of all kinds has gone up by leaps and bounds. The supply of vegetables and fruit is curtailed almost to vanishing point. The markets are deserted. Men and women whose only means of subsistence are the few shillings they make at the sales, are now to be seen with empty baskets and anxious faces standing around the entrances. If this state of affairs continues, it is greatly to be feared, that vegetables will in the near future be a luxury for the middle class; as it is they are beyond the reach of the poor. Of course it must be remembered that vegetables would be dear in any case this year owing to the extremely dry summer which was most unfavourable for planting.

Cabbages have nearly trebled in price, whilst Swede turnips are double what they were this time last year. Onions seem to be the only exception, as the supply is keeping good.

Turning now to the fruit, it is to be seen that the supply is very limited, one of the reasons being that merchants are afraid to order any quantity from foreign sources lest such perishable stuff may be held up at the ports. Furthermore, the consignee is responsible once the goods are forwarded to him; consequently he is slow to take any risks. Prices are at least double what they were last year. In any case the fruit crop is a poor one this year, as readers of IRISH GARDENING may see from the numerous un-

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pint. **1 -**; pint. **1 6**; quart. **2 6**; $\frac{1}{2}$ gall. **4 -**; gall. **7 6**

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favourable reports and comments coming in from growers throughout the country.

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PRICE LIST. FRUIT.		From		To	
		s.	d.	s.	d.
Apples (Golden Spire) per bushel		6	0	8	0
" (Mixed) per float		2	0	3	6
" Dessert per dozen		1	3	2	0
Pears, Irish per dozen		1	6	2	3
Plums per bushel		10	6	11	0
Melons per dozen		17	6	20	0

FLOWERS.

Asters	per bunch	0	10	1	0
Gladolus	per doz. spikes	1	6	2	0
Roses	per doz. blooms	0	8	1	3
Sweet Peas	per bunch	0	9	1	0

VEGETABLES.

Cabbage (York) per load		20	0	30	0
Cauliflowers per dozen		2	0	3	6
Carrots per doz. bunches		0	8	1	0

VEGETABLES—con.

		From		To	
		s.	d.	s.	d.
Cucumbers	per dozen	1	9	2	6
Lettuce	per tray	0	6	0	9
Mint	per doz. bunches	2	0	2	6
Onions (Tripoli)	per bunch	0	8	1	0
Parsley	per tray	0	8	0	10
Parsnips	per doz. bunches	1	6	2	0
Peas	per float	1	8	2	6
Potatoes (British Queens)	per cwt.	3	6	1	6
Rhubarb	per doz. bunches	1	6	2	6
Swedes	per cwt.	2	0	2	6
Tomatoes	per lb.	0	4	0	5
Turnips, White	per bunch	0	8	0	10
Thyme	per bunch	0	1	0	2
Vegetable Marrows	per dozen	3	0	4	0

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NO ADMIXTURE WHATEVER

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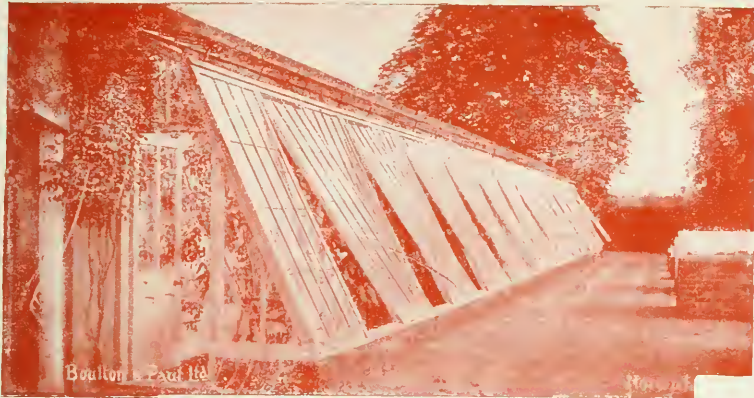
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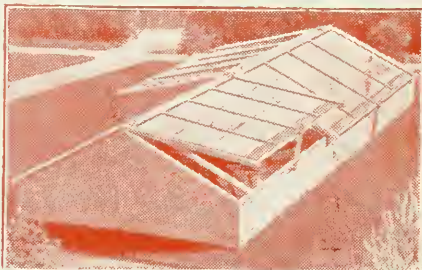
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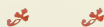
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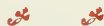
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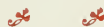


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Iris hispanica	2	0	0
" anglica	1	0	0
Crocus	2	0	0
Narcissus, to name	1	2	0
" mixed	2	6	0
Snowdrops	5	0	0
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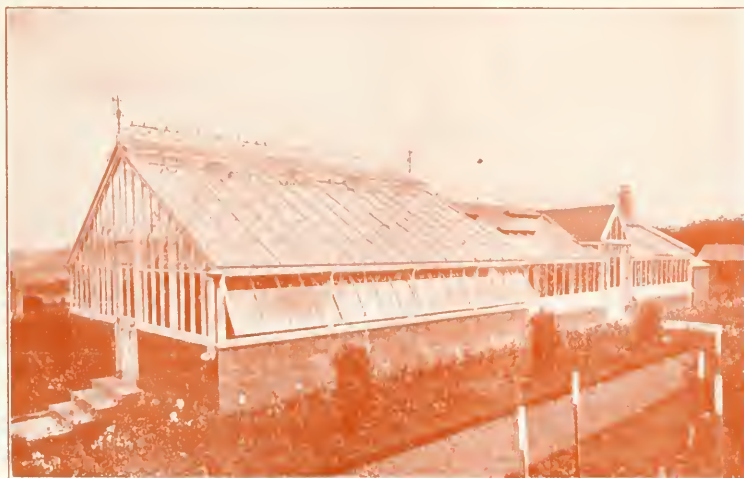
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Royal Horticultural Society.

THE above society held their biennial winter show on the 22nd and 23rd October at the Royal Dublin Society's premises, Ballsbridge, Dublin.

It is regrettable that, owing to the unfavourable spring and early summer, the fruit crop should be such a poor one in both quantity and quality, the weather having done much to prevent the fruit from setting and swelling, and fungoid and insect pests much to disfigure the fruit and make it unfit for exhibition purposes. Indeed, it was mooted during the summer to the Royal Horticultural Society that it would be wise to postpone the show until next year. Owing, however, to the Conference arrangements it was decided to carry out the original proposals.

Taking the fruit as a whole, it was by no means so good as in 1911, but it was ever so much better than even the most sanguine expected.

It is with regret we record that the number of entries was not up to former years, but more than one factor helped in this—the cold spring, fruit not swelling and colouring, poor crop in general, and last, but not least, many exhibitors would not send up fruit, owing to the difficulty of removing it from the station to the show grounds: as it was, a number of good consignments were held up. One very large one which came in late was staged and judged, special prizes being awarded according to merit.

Taking the apples on the whole, they were a very creditable lot. The trade tables, of which there were three, contained some very good specimens of well-grown and well-coloured fruit, especially on the first prize table of R. Hartland & Son, Cork.

The single dishes were on the whole a creditable

lot, though there was no competition in the class for Golden Noble. Allington was fairly well shown, and there was good competition and good fruit of Charles Ross, and when we see this apple doing so well in such a bad season, it is undoubtedly something in its favour.

Cox's Orange was poor indeed, as was also James Grieve. Worcester and Blenheim were good fruits.

In the cookers, with the exception of Derby, Bramley, Warner's King, Lane's, the old Catshead and Loddington, they were below the average size and poor in colour. That good fruit is being produced in Clare and the Suir Valley was demonstrated by the number of prize winners from these districts.

Pears were poor in general, though the six dishes of Conference, Magtate, Beurré Superfin, Beurré Hardy, Beurré Diel, and St. Luke, exhibited by Alderman Bewley, were very good.

There were a few very good dishes in the single dish classes.

In the bottled fruit section, it would appear that Mr. Cumming and Viscount de Vesci had conspired to win all the prizes, as only one went to any other competitor. This showed good work, and there is a great future before the home fruit bottling.

The apple packing classes were well filled, and the quality of the work done was a decided improvement on any previously seen at an exhibition in Ireland. The chief prize-winners were Mr. Jones Henry and Mr. Brown, Sligo: Mr. O'Donnell and Mr. W. Coffey.

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COLLECTIONS OF FRUIT.

Class I., for a decorated table of fruit, brought out only two competitors, yet the judges took a long time to decide which should be first, and as one of them said to me it was a case of spotted fruit against fruit with many cracks. Mr. White (gardener, Mr. Roche) got first prize, and Earl of Bessborough (gardener, Mr. Tomlin) second prize. The latter had much better decorations. Some of the best dishes were Bramley's Seedling, Lord Derby, Hambling's Seedling, Loddington. The Queen, and Peasgood's Nonsuch, cooking varieties; and Worcester Pearmain, Allington Pippin, Ribston Pippin, King of Pippins, dessert. In the class for twelve dishes cooking, A. G. Bowers, Silver-spring, Kilkenny, had an easy win, with probably the best collection of apples in the show : large, beautifully-coloured and clean.

In the several collections for dessert varieties the growers from Kilkenny had, like in most classes at this show, matters very much amongst themselves; Messrs. Bowers and O'Donnell winning most of the prizes with highly-coloured fruit, large and shapely. The chief sorts exhibited were Worcester Pearmain, Allington Pippin, Cox's Orange Pippin, American Mother, Wealthy, Ben's Red and King of Pippins. If it is a fact that most of the southern apples exhibited were grown in grass orchards (and this I was told by one of the most successful exhibitors), it just gives our poor northern growers a little idea of the ideal soil and climate for apple growing in Kilkenny, Waterford, Tipperary, Cork, and parts of Clare. Some of the best dishes were Bramley's Seedling, Lord Derby, Mère de Menage Peasgood's Nonsuch.

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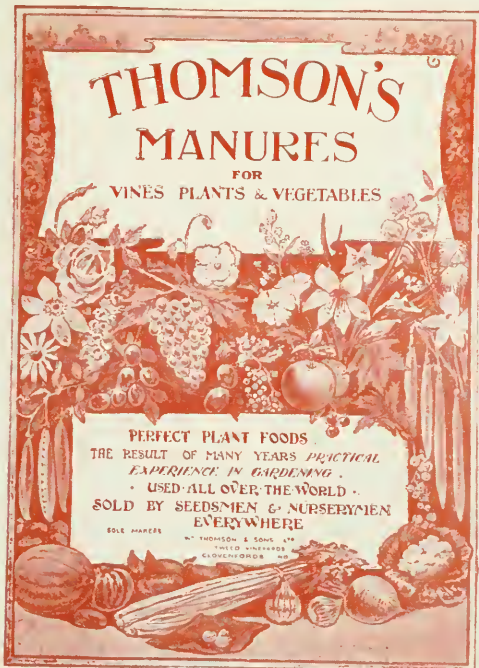
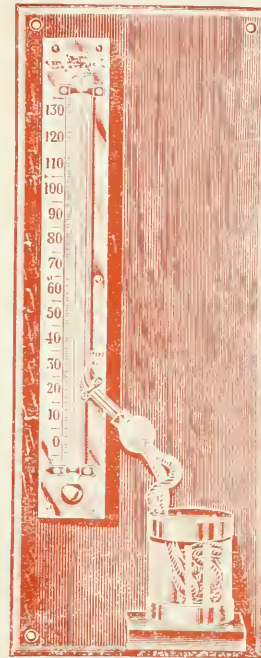
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No. 2	size	Tin—	1 pint	20,000	7
No. 3	size	Bot.—	6 oz.	12,000	4
No. 4	size	Bot.—	4 oz.	8,000	3
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Gallon **10/-** *Carrriage B.*

Gallon 10/- Carriage Paid

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28 lbs. (to dress 100 square yds.) **66.**

1/2-cwt. **11/-**, 1 cwt. keg **21/-**

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1 gallon, to make 51 gallons, in solution	3,6
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Drums Free Carriage Paid

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Another good class was that won by Lady Fitzgerald (gardener, Mr. Barker), and in this collection were extra fine Peasgood's Nonsuch.

PLANTS.

There were only a few classes for plants in pots, and nothing very meritorious, except the *Begonia Gloire de Lorraine*, and in this class, for 6 pots, the first and second prize winners had grand plants covered with flowers.

The class for *Salvias* was also fair, the first prize lot being good, grand for decoration only for their bad habit of dropping the flowers.

Cut flowers were not largely shown, except in the classes for large "Mums" on boards, and here competition was not keen, though several good exhibits were staged. R. H. Stubber, Esq., Moyne, Durrow (gardener, Mr. Flanagan), had by far the finest blooms; his exhibit of twelve in six varieties being equal to those shown by Mr. McKellar in the long ago when we had a *Chrysanthemum* show annually.

NURSERY EXHIBITS.

The exhibit staged by Messrs. Robert Jameson & Sons, the Royal Nurseries, Sandymount, and 21 Nassau Street, Dublin, was unique in design. The ground work was largely composed of *Adiantum* and *Nephrolepis* in varieties; these were used to represent a sheet of water. An exact model of the Clifton Suspension Bridge was built at one end, the standards being supported on rock-work out of which grew ferns. The standards and bridge were made in yellow *Chrysanthemums*, the apertures in the former being done in bronze *Chrysanthemums*. At the other end of the stand was a miniature lighthouse, done in white and bronze *Chrysanthemums*, the whole being about 8 feet high. The lighthouse was set on a rock foundation, and around it were ferns to represent the sea. The edging was made up of *Pteris* fern and small palms. This exhibit was deservedly awarded a gold medal of the society.

A stand which attracted considerable attention was that put up by Messrs. Chas. Ramsay & Son, The Royal Nurseries, Ballsbridge, and 50 Nassau Street, Dublin. It occupied one end of the hall, and was arranged so as to represent three miniature lakes. The space between the lakes was covered largely by ferns and groups of flowering plants, such as *Ericas*, &c. The background was composed largely of *Kentias*, which gave a very graceful appearance to the group. Amongst these were arranged some stands of *Chrysanthemums*; some of these blooms were noticeable for their large size. Standards of *Roses* and *Carnations* were also arranged in the group, and lent an extra charm by their colour. Some very nice bridesmaid bouquets made of *Rose Madame Abel Chatenay* were also exhibited. At the side of the group was a nice collection of fruit trees, including pears, plums, peaches, &c., showing nice, well-trained specimens and nicely rooted. This group was awarded the society's gold medal.

The stand put up by Messrs. Drummond & Sons, Ltd., 57 & 58 Dawson Street, Dublin, consisted of four sections, the middle one consisting of autumn flowering plants and foliage. This looked extremely well, as did the fruit and vegetable portions. For this portion of their exhibit this firm was awarded a gold medal.

Another portion of the stand was devoted to horticultural requisites.

The stand put up by Messrs. Alex. Dickson & Sons, of Newtownards, Belfast and Dublin, was very interesting, showing the testing of seeds for farm and garden.

A very fine display of autumn coloured and other shrubs, also some Conifers, was exhibited by the Pennick Nurseries. This stand was very nicely arranged and looked extremely well. One thing, however, was particularly noticeable—viz. the absence of labelling. These exhibits are not, or at least should not be, put up solely for the purpose of booking orders. There is also a great educational opportunity which should not be lost sight of, as such will eventually benefit the nurseryman.

The stand erected by Mr. Jones, Kilkenny, consisted of some of the latest Dahlias. This stand, though small, had a great deal to attract those interested in this type of plant.

On the stand of Messrs. D. M. Watson, Ltd., South Great George's Street, Dublin, were a large number of horticultural requisites, including different spraying and other compounds, also several types of spraying machines.

Mr. E. Browett, Kingstown, had also a nice collection, the greater part of which consisted of *Palms*, *Begonia Gloire de Lorraine*, *Lilium auratum* and *Ferns*.

The tables of fruit exhibited by Messrs. Dickson of the Royal Nurseries, Chester, were nicely got up, the spaces between the dishes containing vases of Pompon Dahlias and Ferns.

Irish Forestry Society.

A GENERAL meeting of the Irish Forestry Society was held on the 16th October at the D. B. C. Rooms, Dame Street, Dublin, when Dr. Augustine Henry delivered an interesting lecture on "The More Important Forest Trees." The Lord Lieutenant and Lady Aberdeen were present.

A good set of slides showed plantations of trees both in Ireland and Scotland, while others from photos taken in Corsica, N. America, &c., gave one an idea of the size attained by these giants in their native homes.

On the wise choice of profitable trees, said the lecturer, for planting depended the success of the afforestation movement. In a country like Ireland, exposed more than any other in Europe to persistent strong winds, the choice of suitable trees for shelter was also a weighty question. It was mainly about the profitable trees, however, that he wished to speak. A profitable type of tree was that which gave early thinnings and also became ripe for felling at an early age. It was safe to assume that timber having special uses would increase considerably in value; for this reason ash in Europe and hickory in America were trees that should be planted extensively. Coniferous timber would probably always be used, and command a fair price, but in making financial calculations it was unsafe to speculate on any great increase in that class of timber. The few native trees of Ireland were not by any means those which would give the most profitable results.

As regarded temperature, Ireland was more in the Mediterranean region than in the centre of Europe, and trees like the chestnut, a Mediterranean tree; the Corsican pine, and the evergreen oak were absolutely at home in most parts of

Ireland, and nearly all the trees that could be grown on the Riviera could be grown here. The types of trees most profitable to Ireland were to be found on the Pacific coast of America, the region where trees attained their greatest size. Dr. Henry referred to the pine forests which used to cover Ireland between the glacial period and the bronze age, and showed pictures of the remains of their roots, some of which were to be found exposed at low water at Bray. Among the types of trees which the lecturer said were suitable for various conditions prevailing in Ireland were the Corsican pine, the Scotch pine, the Austrian pine, the *Pinus insignis*, the Sitka spruce, and the Maritime pine.

The Corsican pine was said to pile up timber much faster than the Scotch pine. On good soil the Douglas fir will produce timber at the rate of 200 cubic feet per annum. *Pinus insignis* was strongly recommended as a shelter-tree by the seacoast; in the South of Ireland it has grown 100 feet in forty years. The Sitka spruce will grow on wetter and poorer soil than the Douglas fir; it is superior to the common spruce, and will also grow at a higher altitude.

The Maritime pine was of particular interest in view of the experiments in planting bog land carried out by Lord de Vesci at Dummora, Connemara, in the face, so to speak, of Providence. More than forty acres had been planted at a cost of 1s. 6d. for seed and 2s. 6d. for labour, and now at the end of four years the trees had reached the astonishing height of from 1 to 6 feet. No other trees which had been tried had done any good at all under the conditions prevailing there. They knew that trees would grow on bogs, where the conditions of drainage were good. Dr. Henry

displayed a sample of rope made from the old pine tree roots by a man at Coleraine. It had a fifth the strength of manilla ropes, and had been used in thatching, and also to form the spring mattresses of older days.

The Lord Lieutenant, in proposing a vote of thanks to Dr. Henry, said that for some time he had recognised the Irish Forestry Society as an institution which deserved the grateful appreciation of the whole community. It stimulated and encouraged the recognition of the immense value and importance of those things which were included under the heading of forestry in regard to Ireland. Very valuable operations were now being carried on through the Department of Agriculture, but side by side with any such State action, immensely desirable as it was, the creation and stimulating of public opinion was also of the greatest importance. Many trees had been taken down for one reason or another, and probably many of those responsible regretted it, especially as regards the need of shelter on farms. In conclusion, he would quote the maxim of the old Scotchman, delivered to his son: "Jock, be aye stickin' a tree: it will be aye growin' when you are sleepin'." They might apply that very widely.

Mr. Charles Dawson seconded, and pointed out the immense change which had taken place in those provinces of France bordering on the Bay of Biscay, where people formerly went about on stilts. Those provinces now brought in fifteen million pounds to the Government, and were some of the richest districts in France. He suggested that the Lord Lieutenant should inaugurate an Arbor Day in the rapidly-approaching planting season.

DICKSON'S HAWLMARK BULBS

Hyacinths, "The Royal Twelve" Exhibition Varieties, 6 6 ::
 „ "The Popular Twelve" First size bulbs, 4/- ::
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Tulips. Early single, finest sorts, from 3/- 100 ::
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Narcissus, Crocus, Snowdrops, Lilies and other choice bulbs
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Correspondence.

DEAR SIR—I send you sprays of Clematis grata, one of the best of autumn flowering climbers. A mass of it growing up through one of our beech hedges is a picture. Many of the sprays are well over a yard long.

Another good plant is Antholyza crocosma-oides, which is very fine here just now, and stands the weather better than any of the Montbretias. A mass of this on the top of the hill can be seen on the other side of the valley a mile away.

G. N. SMITH, Daisy Hill Nursery, Newry.

DEAR SIR. We write with the object of calling your kind attention to our latest product, the "Abol" Worm Killer, which is making very rapid strides amongst the leading golf and other clubs, extremely favourable reports and repeat orders reaching us from all parts.

A pamphlet containing full details is enclosed, whilst we are also taking the liberty of sending you separately a small quantity of the powder, in the hope that you may be able to give it a trial.

We should be very glad to hear from any of your readers connected with golf, tennis, bowling clubs, &c., who would care to give "Abol" Worm Killer a trial, in order that we may send them a liberal sample for the purpose. If you could see your way to make this known to your readers through the columns of your valued Journal, we should be greatly obliged.—Yours faithfully,

E. A. WHITE, LTD.

Beltring, Paddeek Wood, Kent.

Obituary.

It is with the greatest regret that we record the death of Mr. Wilson on October 23rd, gardener and steward to Sir John Ross of Bladensburg, Rostrevor, Co. Down. For many years Mr. Wilson has watched over and taken the greatest interest in the fine collection of trees and shrubs at Rostrevor, in fact he has planted many of the specimens now thriving so well.

His geniality and kindness will be long remembered by those who have paid Rostrevor a visit, and he will be greatly missed by his employer and by many friends.

Catalogues.

MESSRS. WM. POWER & Co., Waterford, send their "Planters' Guide for 1913-1914." This well-known firm has for over half a century been

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Advt.

despatching plants and nursery stock all over Britain, and in fact are doing a good export trade to many parts of the globe. Forest trees and hedge plants are grown in large quantities, and sound advice is imparted in the catalogue as to which kind of tree will be profitable on sandy or heavy ground, and whether suited to a high or low elevation. They claim that no firm in the country can equal their stocks of true Native Larch. The catalogue contains good lists of Conifers, evergreen and deciduous shrubs. Apples, pears, and hardy fruits are described in detail, and some coloured illustrations given. Roses, Clematis, and many other plants necessary in a beautiful garden are listed, and numerous testimonials give evidence of the satisfaction of their customers. Bulbs for bowls and planting, from Messrs. Wm. Power, is a good and select list, containing all the best bulbs and roots for present planting and forcing. Directions for bulb growing in ornamental bowls are given, and cultural directions are given to the different kinds described. The catalogue is nicely got up and well illustrated.

MESSRS. FRANK CANT & Co., Braiswick Rose Gardens, Colchester, send a copy of their new catalogue. Their list of recent successes is one of which the firm may well be proud, for the competition nowadays for cups is very keen. Their record gives a guarantee that care and vigilance are exercised in the production of their Rose trees, which are grown without artificial manures. The Rose list is a very complete one, including all sections; it includes all the best novelties of raisers both at home and abroad, and it is interesting to note the very large number of Hybrid Teas which are listed. Illustrations show weeping Roses and the very attractive way of growing Climbers on a tripod of poles.

A CATALOGUE comes from "The Whins," Chalfont St. Peter, Bucks, containing a select list of Roses and Shrubs, but the contents are mainly Alpine and herbaceous plants, and their speciality of silvery-foliaged plants. To anyone making a collection of Alpines or planting the herbaceous border, this list should be helpful and useful.

A CATALOGUE of Fruit Trees and Roses comes from MESSRS. LAXTON BROS., Bedford, together with a pamphlet of Practical Hints on Planting, Pruning, and Cultivating Fruit Trees and Bushes. Messrs. Laxton Bros. are well known as reliable experts on hardy fruits, so that hints coming from them will be sound and useful. In their catalogue some new apples, plums, and currants are described, followed by a good descriptive list of the best apples, cherries, pears, peaches, roses, and all the hardy fruits which may be grown in this country. Intending planters should send for a copy.

PURE COCOANUT FIBRE FOR BULBS

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G. W. MILLER, F.R.H.S., CLARKSON NURSERIES, WISBECH

MESSRS. W. WELLS & Co., Merstham, Surrey, send a descriptive catalogue of Chrysanthemums, Perpetual Carnations, Delphiniums, and Michaelmas Daisies. Lovers of the Chrysanthemum always find in this list something new and pleasing, whether their tastes lie in growing large blooms under glass or growing the early flowering varieties in the open.

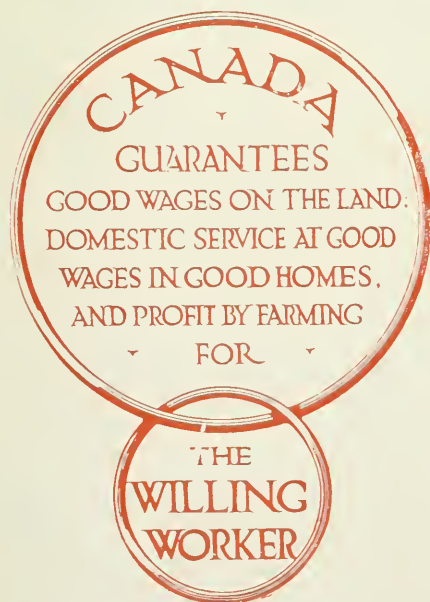
WATSON'S (CLNOTARF NURSERIES) REAL BORDER CARNATIONS FOR 1913-14 is a list of varieties which have proved successful in the open ground, and are most useful for planting in beds or in the flower border. Dublin Pink, a variety of their raising, has done exceptionally well in many gardens, giving a quantity of beautiful flowers for cutting. In the list will be found many novelties among the good old sorts. Pinks, Tree, and Malmaison Carnations are also quoted and described.

Show Fixtures for 1913

THIS Schedule is designed to assist Societies in selecting dates for their Shows, by indicating what arrangements have already been made. Secretaries will greatly oblige by sending the earliest possible intimation of their fixtures, and of any change which takes place in their arrangements.

November 1st—Co. Clare Fruit and Farm Produce Show.

„ 11th, 12th—Ulster Horticultural Society Chrysanthemum Show.



For free maps, pamphlets and full particulars apply to Mr. JOHN WEBSTER, Canadian Government Emigration Agent, 17-19, Victoria Street, Belfast; Mr. EDWARD O'KELLY, Canadian Government Emigration Agent, 44, Dawson Street, Dublin; or to Mr. J. OBED SMITH, Assistant Superintendent of Emigration, 11 & 12, Charing Cross, London, S.W.

Ghent Exhibition.

THE beautiful lawns have been one of the most attractive and prominent features of this great Exhibition. English and American visitors will be interested to learn that this gratifying result has been in a large degree achieved by sowing Messrs. Sutton's famous Grass Seeds, for which the celebrated Reading firm has been awarded a "Grand Prix" by the Jury.

It will be remembered that Messrs. Sutton were the recipients of a "Grand Prix" at the great Franco-British Exhibition in 1908 and a Gold Medal at the Brussels Exhibition in 1910 for the delightful lawns there produced from their seeds.

Notes.

RECORD OF PROCEEDINGS OF THE ROYAL HORTICULTURAL SOCIETY OF IRELAND (No. 2).—Rev. J. H. Pemberton, in writing of the Roses at the autumn show, makes a plea for absent friends, and urges the R. H. S. to make a class for decorative Roses. "Exhibition Roses are not now the favourites of fashion, but those which make our gardens gay continuously to late October." Roses like General McArthur, Duchess of Wellington, Lady Pirrie, and Mme. Abel Chatenay may be grown by almost everyone, so we hope next year to see a class for these shown in vases or baskets. Rev. MacDuff Simpson writes about the Sweet Peas, and H. E. Richardson on hardy plants, while the Secretary concludes with some notes.

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THE JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY (England), August, 1913, is a large volume, and particularly valuable for those who take an interest in the Primula family, for it contains an account of the Primula Conference. Dr. J. MacWatt deals with European Primulas; Mr. R. Farrer, "Primula Hybrids in Nature"; Prof. Bayley Balfour, on "Chinese and other Primulas"; and Mr. W. G. Craib on Himalayan Primulas. Many new and interesting Primulas are figured. Lectures on other subjects are also included, such as the Spring Flower Garden, by W. H. Divers; Botany in Bulgaria, by C. F. Ball; and the Origin of Life, by Rev. G. Henslow.

MR. H. H. COOK, of the Edinburgh Parks Department, and previously five and a half years head gardener to Sir Hutchinson Poë, Bart., Heywood, Abbeyleix, and before that foreman at St. Anne's, Clontarf, Dublin, has been appointed head gardener to the Right Hon. the Earl of Ancaster, Drummond Castle, Crieff, Perthshire, Scotland.

Dublin Wholesale Markets.

For the past month the labour trouble has told inevitably and severely on the markets. Garden produce of all kinds has been forwarded in very limited quantities, with the result that prices have exceeded almost abnormally those of the previous month. The supplies are so short that buyers were never so eager in purchasing to meet the demands of their customers. However, it is to be hoped when the present labour crisis is over prices will assume their normal tone, and the usual busy and genial atmosphere, consequent on large supplies and ready sales, which heretofore pervaded the markets, will return once more.

Cabbages are keeping a steady upward tendency, and are almost treble the price that they were the corresponding period of last year, thus leaving a handsome margin of profit to the grower. Market gardeners who have large supplies of this vegetable are now making their harvest. Celery is now showing its appearance in small quantities, and though of inferior quality commands a high price. No doubt the poor quality of celery is due to the long-continued drought of summer, and with many the crop will be a failure. The supply of cauliflowers was miserably small, consequently there was brisk

bidding, and prices ran exceedingly high. Taking it all round, the crop has been a poor one this year, as it was a most favourable season for "buttoning." Brussels sprouts were well in evidence, and the high prices of the previous month were well maintained. Yellow turnips, parsley, spinach and lettuce were present in small quantities, and commanded the prevailing profitable figures.

Irish apples were scarce during the latter half of the month, the supply being limited to a few barrels of mixed lots and some boxes of Worcester Pearmain, Lord Derby, and Warner's King. Excellent prices were obtained even for those of inferior quality. Blackberries are still sold in small quantities, and command a ready sale, but the sudden cold change and sunless weather will stop any further marketing.

PRICE LIST.—FRUIT.

		From	To
Apples—		s. d.	s. d.
(Lord Derby)	per barrel	13 0	15 0
(Mixed)	per float	1 6	3 0
(Worcester Pearmain)	per dozen	0 9	1 1
Pears (Irish)	„	1 6	2 0

FLOWERS.

Asters	per bunch	0 8	0 10
Roses	per doz. blooms	0 6	1 2
Chrysanthemums	per doz. bunches	0 8	1 0

VEGETABLES.

Cabbage (York)	per load	15 0	28 0
„ („)	per large load	28 0	10 0
„ (Savoy)	per load	12 0	15 0
Carrots	per doz. bunches	0 6	0 10
Lettuce	per tray	0 6	0 8
Celery (white)	per dozen	2 0	3 0
„ (pink)	„	1 6	2 0
Cauliflowers	per basket	2 6	3 6
Mint	per doz. bunches	1 6	2 0
Onions (Tripoli)	per bunch	0 6	0 10
Parsley	per tray	0 1	0 6
Parsnips	per doz. bunches	1 6	2 0
Swedes	per cwt.	1 2	1 6
Tomatoes	per lb.	0 1	0 5
Turnips (Orange)	„	0 1	0 6
„ Jelly)	per bunch	0 1	0 2
Thyme	„	2 0	2 0
Brussels Sprouts	per float	3 6	1 0
Vegetable Marrows	per dozen	3 6	1 0

J. D.



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—, Esq., Berwick House, near Shrewsbury.—The plants in both boxes arrived safely to-day. They are an excellent selection. I cannot speak too highly of the careful way in which they were labelled and packed.

From —, Esq., Malvern Road, Weston-Super-Mare, 9th October, 1913.—The Kelway Border which you supplied to me in November, 1911, has given every satisfaction. I changed my residence in March last, and brought the greater part of the Border Plants with me. I had no time to prepare the ground for them, and as the soil here is of a very dry and sandy nature, I was prepared to lose a good many of the plants. To my agreeable surprise, however, only one plant died. The rest have grown vigorously, and nearly all have borne plenty of bloom, notwithstanding the exceptionally dry summer we have had.

This, I think, speaks for the vitality of the plants sent out by your firm.

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From —, Esq., Hesse, East Yorks.—You may possibly remember sending me in March or April, 1912, one dozen Delphiniums, Collection B, and also one of each of the following:—King of Delphiniums, Persimmon and Beauty.

They have flowered splendidly, and I am more than satisfied with them, so much so that I had part of my small garden photographed this last summer when they were about at their best, and I am sending you herewith a copy of one of the photos. I should like six more of Collection B.

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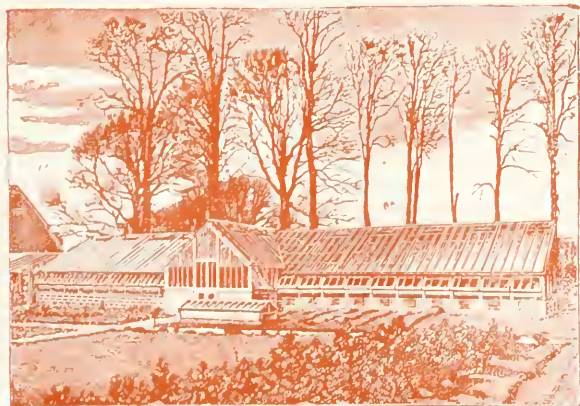
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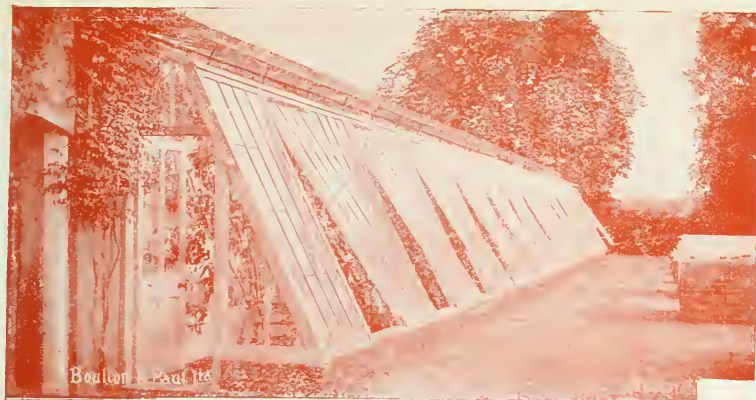
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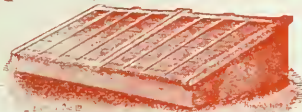
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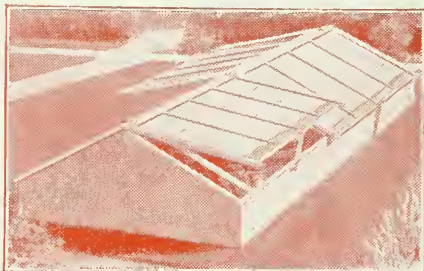
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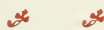
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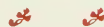
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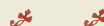


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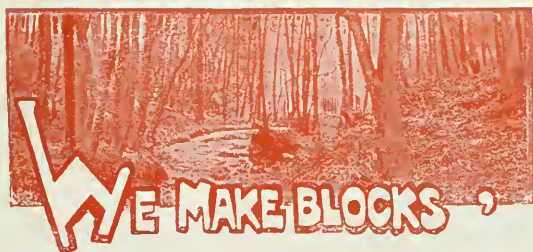
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Royal Horticultural Society.

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Shows

Ulster Horticultural Society.

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It was an excellent all round show, in which the Chrysanthemums dominated the picture more than they have done in recent years. The reason is not that the numbers of these charming flowers on view have greatly increased, but that the effects of the unfavourable hardy fruit season are indicated in a considerable contraction of the exhibits in the fruit department. And for several years past it has been a question of hardy fruit rather than Chrysanthemums as the predominant feature.

To all lovers of flowers the show is an annual source of delight, and there can be no doubt that through the operations of this excellent society a great impetus has been given to the cultivation of the Chrysanthemum. Each show has its own particular feature of excellence, and it can well be understood that in an undertaking of such great dimensions a new feature must be of a very

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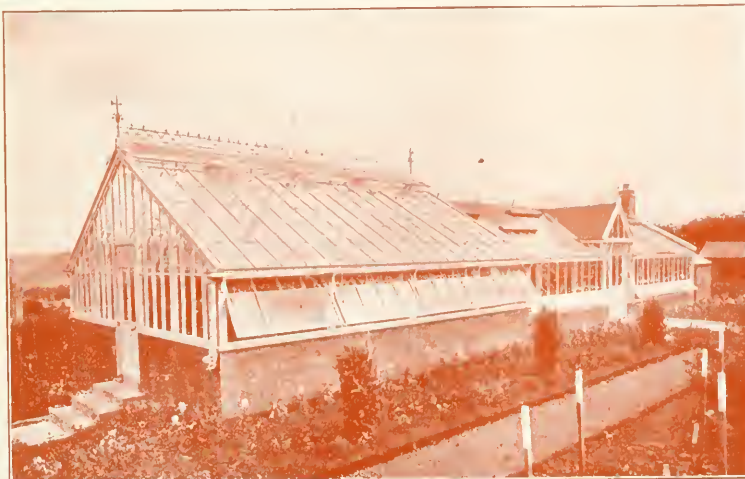
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pronounced character to attract the eye of the spectator. An interesting and novel departure on the present occasion was the decoration by ladies of dinner tables, which are accommodated in the central passage, extending almost the full length of the markets. This novelty attracted a good deal of attention, especially on the part of the fair sex, and it may safely be asserted that displays of a similar character will occupy a prominent position at future shows. One of the most notable displays of the show was the beautiful exhibit by Mr. James Davies, Superintendent of Parks, who, by kind permission of the Parks Committee of the Corporation, constructed a realistic fairy dell, which reflected the highest credit on his skill and artistic taste.

The number of entries this year shows a decrease on those of previous displays, but, of course, the success of an undertaking of this kind is not to be judged merely by figures, and it is gratifying to be able to state that the quality of the exhibits in most of the sections was of an exceptionally high order. The increase in the number of single blooms was very marked, demonstrating in a remarkable manner the beautiful results that can be obtained by selection and cultivation, and there were expressions of amazement on every hand at the symmetry of form and harmony of colour displayed in this section. Indeed, the single bloom seems to be gradually taking the place once occupied by the Japanese, and while the latter is generally recognised as a horticultural triumph, the single bloom is regarded as being more effective from the decorative point of view, less artificial treatment being necessary for its display. On the whole the Chrysanthemums were beautifully grown and splendidly staged, and the keenest

interest was shown in the many varieties on view. Mr. John Jameson, D.L., a well-known and successful horticulturist, secured the premier award for 15 vases of exquisite Japanese blooms, and he was given first place for 18 Japanese blooms shown in boxes, while he also obtained a number of second awards. Captain Roger Hall, D.L., of Narrowwater, was the most successful competitor in the class for 10 vases of Japanese blooms. Mr. J. Milne Barbour, D.L., gained the primary distinction in the classes for one vase of five pink blooms, one vase of five yellow blooms, and a vase of single blooms arranged for effect. Lord O'Neill was awarded first place in the class for a vase of five white blooms, and Mr. Herbert Brown, of Helens Bay, gained first honours for twenty vases of single blooms in distinct varieties, as well as for a vase of single red blooms and a vase of single yellow blooms. Mr. Edwin Hughes, J.P., had some notable exhibits, and he was awarded first place in the classes for one vase of white and pink, single Geraniums gaining similar honours. Mr. J. P. Ewing, Helens Bay, was first in the class for 10 vases of single blooms in distinct varieties. Mr. H. E. Richardson thoroughly deserved the triumph which he achieved as a grower and exhibitor of winter flowering Carnations. Naturally the ladies were keenly interested in the artistic arrangement of the baskets of Chrysanthemum blooms, first place in this class being awarded to Miss Pauline Ewing, Belmont Park, and in the floral decorations for dinner tables, in which Mrs. R. Draper, of Dunmurry, gained premier honours. In the plant section Mr. Charles Duffin scored heavily, securing no less

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AUTUMN SHOW.

THE Autumn Show of Fruit and Farm Produce of the County Clare Horticultural Society was held at the County Courthouse on Nov. 1st, and though small, as compared with some past exhibitions, was a very successful one, the support accorded by the general public being very encouraging, and should be an earnest to the energetic committee that their efforts are meeting with appreciation. The entries were not as numerous as heretofore, the season having militated against the production of fruit, but the quality of what was shown was undeniable, and the fame of the Clare apples was worthily sustained. A striking feature of the Show was the magnificent stand of fruit sent in by Lady Fitzgerald, Carrigoran (not for competition), with which she scored such a signal success at the late Dublin Show, and for which she was awarded a gold medal. The stand was a centre of attraction during the afternoon.

Of the fruit exhibited in the competitions, Mrs. W. Coffey followed up her successes in Dublin and at the Suir Valley Show, and she had a superb collection of apples, of which it would be difficult to find the superior. She succeeded in gaining no fewer than ten First Prizes. Lord Inchiquin and Mr. J. Enright were, however, very little behind, not merely in the number of successful awards, for each had seven First Class Cards, but in the quality of their fruit. Major Hickman had five First Prizes; Mrs. Ed. Frost had four. But the full list of awards will be found below.

An interesting feature of the Show was a very nice stand of Chrysanthemums, and plants and bulbs in pots, by Mr. Jones, the widely-known Kilkenny nurseryman, which came in for much attention, most of the contents of the stand changing hands in the course of the afternoon. The Chrysanthemums were in a variety and wealth of colouring, and their freshness of bloom was striking.

In going through the various sections one found a melancholy interest attaching to one class, the Scott Memorial Prizes, so kindly and thoughtfully presented by Lady Fitzgerald to commemorate one who was one of the earliest and most earnest supporters of the Society, and whose name will be inseparably associated with the fruit industry of the County Clare. Above the winning stands of apples was a photograph of the late Mr. Fitzwilliam Scott and his fruit exhibit at the last Autumn Show of the Society, which revived memories of his charming personality and of the absorbing interest which he at all times took in the general welfare and prosperity of his native county, and in these Clare exhibitions especially.

The judges were in the Fruit Classes—Mr. W. Early, Glenstal, Co. Limerick, and Mr. C. Lett, Glenville, Co. Waterford; and in the farm produce—Mr. Barker, F.R.H.S., Carrigoran, and Mr. T. Morton, Dromore.

LIST OF AWARDS.

DESSERT APPLES.—Allington Pippins—First prize, Major S. C. Hickman; 2nd, Mr. P. Hannon; 3rd, Mrs. Frost.

Beauty of Bath—No award.

Cox's Orange Pippin—1st, Mrs. W. Coffey; 2nd, Lord Inchiquin; 3rd, Mrs. E. Frost.

Gascoigne's Scarlet—1st, Mrs. W. Coffey; 2nd, Major Hickman.

James Grieve—1st, Lord Inchiquin; 2nd, Mrs. Ed. Frost; 3rd, Mrs. W. Coffey.

King of the Pippins—1st, Lord Inchiquin; 2nd, Mrs. Coffey; 3rd, Major Hickman.

Lady Sudeley—1st, Mr. J. Enright; 2nd, Mrs. Coffey; 3rd, Lord Inchiquin.

Ribston Pippin—1st, Mr. J. Enright; 2nd, Mrs. Coffey.

Worcester Pearmain—1st, Mr. J. Enright; 2nd, Mrs. Coffey; 3rd, Major Hickman.

Best dish of any other variety—1st, Major Hickman; 2nd, Mrs. Coffey; 3rd, Mrs. E. Frost.

COOKING APPLES.—Alfriston—1st, Lord Inchiquin; 2nd, Major Hickman.

Annie Elizabeth—1st, Mrs. Coffey; 2nd, Lord Inchiquin.

Bismarck—1st, Mrs. Coffey; 2nd, Mr. J. Enright; 3rd, Lord Inchiquin.

Blenheim Pippin—1st, Mrs. Frost; 2nd, Mr. J. Enright; 3rd, Mr. P. Hannon.

Bramley's Seedling—1st, Mr. J. Enright; 2nd, Mrs. E. Frost; 3rd, Major Hickman.

Cox's Pomona—1st, Major Hickman; 2nd, Lord Inchiquin; 3rd, Mrs. Frost.

Ecklinville Seedling—1st, Mrs. E. Frost.

Grenadier—1st, Major Hickman; 2nd, Mrs. Frost.

Lane's Prince Albert—1st, Mr. P. Hannon; 2nd, Mrs. Coffey; 3rd, Mr. J. Enright.

Lord Derby—1st, Mrs. Coffey; 2nd, Major Hickman; 3rd, Mr. P. Hannon.

Mère de Menage—1st, Major Hickman; 2nd, Lord Inchiquin.

Newton Wonder—1st, Mrs. Coffey; 2nd, Mrs. R. Vere O'Brien.

Peasgood's Nonsuch—1st, Mr. J. Enright; 2nd, Mrs. Frost; 3rd, Mrs. Coffey.

Warner's King—1st, Mr. J. Enright; 2nd, Mrs. Coffey; 3rd, Lord Inchiquin.

Best dish of any other variety—1st, Mr. P. Hannon; 2nd, Mrs. Frost; 3rd, Major Hickman.

PEARS.—Beurré Diel—1st, Lord Inchiquin.

Castillac—1st, Mrs. Vere O'Brien.

Doyenné du Comice—1st, Lord Inchiquin.

Clapp's Favourite—1st, Lord Inchiquin.

Half bushel of dessert apples, quality of fruit and neatness of packing equally considered—1st, Mrs. Coffey; 2nd, Mr. J. Enright; 3rd, Mrs. Frost.

Most tastefully packed and securely packed two dozen cooking apples—1st, Mr. J. Enright; 2nd, Mrs. Coffey; 3rd, Lord Inchiquin; v. h. c., Major S. C. Hickman.

Most tastefully and securely packed dozen of dessert apples—1st, Mrs. Coffey; 2nd, Major Hickman; 3rd, Lord Inchiquin.

Best 10 dishes, 6 cooking and 4 dessert, varieties—ripe—1st, Lord Inchiquin; 2nd, Mrs. Coffey; 3rd, Mr. J. Enright.

Best five dishes of apples grown by *bona fide* occupiers of a Union District Cottage—1st, Mr. M. Reidy; 2nd, Mr. J. Hickie.

FITZWILLIAM SCOTT MEMORIAL PRIZES (presented by Lady Fitzgerald).—Best graded and most tastefully packed one dozen box of Cox's Orange Pippin—1st, Mrs. Coffey.

Best half bushel of dessert apples, quality, grading, and packing considered—1st, Mrs. Coffey; 2nd, Mr. J. Enright.

Best bushel of cooking apples, quality, grading, and packing considered—1st, Mrs. E. Frost; 2nd, Mrs. Coffey; 3rd, Mr. J. Enright.

HONEY AND PRESERVES.—Best three sections—1st, Lord Inchiquin: 2nd, Mrs. Vere O'Brien: 3rd, Major Hickman.

Best three jars of run honey—1st, Major Hickman.

Best 2lb. glass jar of jam (light coloured)—1st, Mrs. Frost: 2nd, Mrs. Delany: 3rd, Mrs. L. Frost.

Best 2lbs. glass jar of jam (red or dark coloured)—1st, Mrs. Delany: 2nd Mrs. L. Frost.

Best bottle of preserved fruit (whole)—1st, Mrs. Vere O'Brien: 2nd, Mrs. Delany: 3rd, Mrs. Frost.

Best bottle of preserved fruit (red)—1st, Mrs. Vere O'Brien: 2nd, Mrs. Delany: 3rd, Mrs. E. Frost.

Mrs. E. Frost was awarded a special prize for 2lb. jar of apple jelly.

CUT FLOWERS.—Best twelve Cactus Dahlias—1st, Mr. Thomas Collins.

Best twelve vases of early flowering Chrysanthemums (dissimilar)—1st, Rev. R. Scott.

Best six vases of Michaelmas Daisies (dissimilar)—1st, Lord Inchiquin: 2nd, Rev. R. Scott: 3rd, Mrs. Vere O'Brien.

VEGETABLES.—Best 5 lbs. sample wheat—1st, Mr. P. Gavin: 2nd, Mr. T. J. Casey.

Best 5lbs. sample white oats—1st, Mr. P. Gavin: 2nd, Fergus Reclamation Syndicate.

Best 5lbs. sample black oats—1st, Fergus Reclamation Syndicate: 2nd, Mr. P. Gavin.

Best sheaf of rye (20 heads)—1st, M. T. J. Casey: 2nd, Mr. P. Gavin.

Best two heads field cabbage—1st, Mr. P. Gavin: 2nd, Mrs. Coffey: 3rd, Mr. J. Linnane.

Four heaviest and best Swedes—1st, Jas. W. Scott: 2nd, Fergus Reclamation Syndicate: 3rd, Mr. T. J. Casey.

Four heaviest and best mangel-wurzel—1st, Mrs. Coffey: 2nd, Fergus Reclamation Syndicate.

Four heaviest and best yellow Globe turnips—1st, Mr. J. Mungovan: 2nd, Fergus Reclamation Syndicate: 3rd, Cormac Halpin: v. h. c., Mrs. Coffey.

Four heaviest and best yellow-fleshed turnips—1st, Fergus Reclamation Syndicate.

Best collection of vegetables grown by occupier of District Cottage—1st, Mr. P. Linnane.

Four heaviest and best white turnips—1st, Mr. P. Gavin: 2nd, Mr. T. J. Casey.

Four heaviest and best field carrots—1st, Fergus Reclamation Syndicate: 2nd, Mr. J. Mungovan: v. h. c., Mr. T. J. Casey.

Catalogues.

MESSRS. ALEX. DICKSON & SONS, LTD., send a copy of their catalogue of "Hawthorn" Fruit Trees, Conifers and Ornamental Trees cultivated at Newtownards, Co. Down, and Blackrock, Co. Dublin. There is a very good descriptive list of apples which are supplied either on the crab stock or on Paradise. A complete artificial manure which is recommended is:—12 lbs. superphosphate of lime, 10 lbs. nitrate of potash, 1 lbs. chloride of soda, 2 lbs. sulphate of magnesia, 1 lb. sulphate of iron, and 8 lbs. sulphate of lime, mixed, and apply at the rate of a quarter of a pound to the square yard." The fruiting crabs are valuable both for spring blossom and autumn fruit. Currants, gooseberries, and all the smaller kinds of fruit are catalogued with good lists of peaches, pears, and plums. Messrs. Dickson claim to have the most extensive stocks of Conifers in Ireland, and they also have a very good collection of trees and shrubs, regular transplanting ensures plants which move without much fear of loss.

THE PLANTERS' GUIDE for 1911 comes from Messrs. Little & Ballantyne, of Carlisle. Forest trees are grown in enormous quantities by this firm at the elevation of 700 feet above sea level, producing trees of the hardest description—Conifers, evergreen and deciduous trees and shrubs are also largely grown and good lists given. These are followed by Clematis, Rhododendrons, Roses, Fruit trees. Herbaceous and Alpine plants.

MESSRS. Watson's Catalogue of Fruits, Roses and Shrubs is as usual a well turned out and attractive catalogue, containing notes on planting, manuring and spraying. There is a goodly list of apples and other hardy fruits, followed by a fine selection of Roses and hardy ornamental trees and shrubs.

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Catalogues (continued).

MESSRS. R. WALLACE & Co., Colchester, sends a List of Irises, which includes 350 distinct species and varieties. The genus *Iris* is one of the most beautiful and varied among all our hardy plants, and no garden seems complete without some representatives. The present authority on Irises, Mr. W. R. Dykes, writes an introduction, in which he conveys many useful cultural hints and general information. The Algerian *Iris* is a favourite for planting against a warm wall to give flowers in winter, but there are many other kinds given in this list which will carry on the display until the popular Spanish and English Irises come into bloom. The true *Iris nepalensis* is probably offered for the first time, a fine germanica form having formerly done duty for this species. Messrs. Wallace obtained from the late Sir Michael Foster's garden at Shelford some of the finest hybrid Irises in existence, which they are offering in this new list.

MESSRS. DICKSONS, of Chester, send their Catalogue of Ornamental and Forest Trees, Shrubs, &c. It is a large and well arranged catalogue, easy of reference and illustrated. Two good novelties offered are a golden variety of Cornish Elm, said to retain its colour until the leaves fall, so that it should make a fine specimen tree, and a new golden-leaved Flowering Currant. The catalogue contains full lists of plants for game coverts and hedges, trees for forest planting, evergreen and deciduous shrubs and conifers.

A CATALOGUE of Fruit Trees, Roses, Ornamental Trees and Shrubs comes from Messrs. W. Seabrook & Sons, Chelmsford. Some very useful notes are given on the cultivation of fruit trees, which is a speciality of this firm. They write:—"We have grown fruit both on the cordon and bush systems for over thirty years, and can thoroughly recommend them to market growers and to private residents, to whom space is a consideration, and the maximum of fruit on the minimum area of land is desired." A good list of apples is offered either on English Paradise or the Crab Stock. Selections of the best apples for desert or kitchen are given. Pears, plums, peaches and all other hardy fruits are quoted, and followed by a very good list of Roses, with many beautiful illustrations.

Correspondence.

AN OPEN LETTER TO THE GARDENERS OF IRELAND.

FELLOW GARDENERS,—Has the time not arrived when we should organize for ourselves a trade union to voice our aspirations and protect our interests? Is it not a grievous fact that we who belong to the oldest and one of the most skilled crafts on the face of the earth have no standard wages, no useful apprenticeship system, no comradeship or cohesion of any sort? Are we not, when looking for work, in wild competition with each other, which has in effect the bringing down still further an already low wage, and when we pass away, are our wives and children not left to the tender mercies of a not very charitable world, and have we not a host of other grievances on which pages could be written?

Is this to go on for ever? Are we so humdrum and blind as to contentedly lie in a rut whilst

other men and groups of men are marching onward to better conditions of life, which can only be obtained by solidity and combination? These are times of hustle and push, and the individual, the craft, or the institution which stands still is lost. Are we to be lost? Are we to be thrust behind? We who should be first are left to be last. Better last than not at all. Now, it is open to us to change all this, and turn over a brighter page in the history of Gardening, and to form a point from which we can start with new zeal and open up pleasures and advantages for ourselves and families.

To start the movement it is necessary to form a strong committee of gardeners who have forward ideas, and who see the necessity of doing something. If all such will communicate with me we can arrange a meeting to discuss ways and means.

1 Lennon's Cottages,

Merrion, Co. Dublin.

DENIS BYRNE.

Dublin Wholesale Markets.

It is satisfactory to note that the markets are now gradually getting back to normal conditions, and quite a large amount of produce is now being delivered without obstruction.

The scarcity of cabbages during the month has evoked much comment, and many householders found it impossible to get a sufficient supply for the Sunday dinner. Traders with the business eye are on the alert to buy up the meagre supplies at high prices, and quickly dispose of them to customers who are able to pay fancy prices. The remarkable scarcity of cabbages for this time of the year is felt on all sides. This is not due entirely to the labour agitation, but in some degree to the past unfavourable season which has been so detrimental to the culture of cabbages. Other vegetables were well stocked, and met with a ready demand at the prevailing prices.

1914 New Volume IRISH GARDENING

THE new volume will sustain the old standard of excellence as to authoritative articles on both the practical and scientific side of gardening, but new features and new writers will be introduced during the course of the year. Every Irish gardener and every owner of any size garden in Ireland should obtain *IRISH GARDENING* (monthly) and read it! and having read it should preserve it for binding—it is worth it.

This year's volume (1913) can be supplied bound in Green Cloth, in time for Xmas, 4/11 post free.

The scarcity and poor quality of Irish apples in the markets for the past month demonstrate clearly that the unfavourable spring and early summer played havoc on orchardists. As a result there are widespread complaints of fruit being undersized, and in many cases badly disfigured by scab, though colouring has been finished better than for some seasons back. In fact this has been one of the worst fruit years for a considerable time. It is pleasing to note, however, that first grade apples are commanding a good return, attractively marketed in trays, and holding from two to three dozen fruits. Apples in barrels are now becoming more plentiful, the variety Bramley's Seedling holding sole sway, and commanding excellent returns for good quality lots. Of dessert apples, Allington Pippin and Cox's are most in evidence and are eagerly sought for.

In the flower section there is no diminution in the popularity of the gay Chrysanthemum, as is apparent by the large quantities of cut blooms in all their glorious wealth of colours and tints displayed on the market. Now and again during the month they were more or less a glut owing to the large supplies arriving from Covent Garden. Taking the trade all-round the profitable prices obtained in most cases amply repay the grower. And if one may be allowed a little digression here it is worthy of remark that flowers apart from their market value are a redeeming feature in the everyday markets.

PRICE LIST—FRUIT.

Apples—		From	To
Bramley's Seedling		s. d.	s. d.
	per barrel (1sts)	12 0	22 0
	(2nds)	11 0	16 0
" "	per bushel	5 6	7 6
" "	per dozen	0 8	1 6
Dessert (Allington Pippin)	per dozen	0 10	1 0
Grapes (black)	per lb.	0 10	1 6
" (Muscats)	"	2 6	3 3
Tomatoes	"	0 3	0 4

VEGETABLES.

Cabbage (York)	per load	12 0	20 0
" (")	per large load	30 0	42 0
" (Savoy)	per load	15 0	37 0
Carrots	per doz. bunches	0 9	1 1
Cauliflowers	per flasket	2 3	1 6
"	(2nds)	1 0	1 10
Celery (white)	per bunch	1 10	2 3
" (pink)	"	1 6	1 8
Lettuce	per dozen	0 6	0 8
Onions	per bag	4 6	5 0
Parsley	per float	0 6	0 9
Parsnips	per doz. bunches	1 2	1 1
Swedes	per cwt.	1 0	1 3
Turnips (white)	per bunch	0 3	0 1
Thyme	per doz. bunches	2 0	1 0
Sprouts	per float	1 9	2 6

FLOWERS.

Chrysanthemums	per doz.	1 0	2 0
" (yellow)	"	1 2	2 3
" (yellow, in-curved)	"	2 0	2 6
" (bronze)	"	1 2	2 6

J. D.

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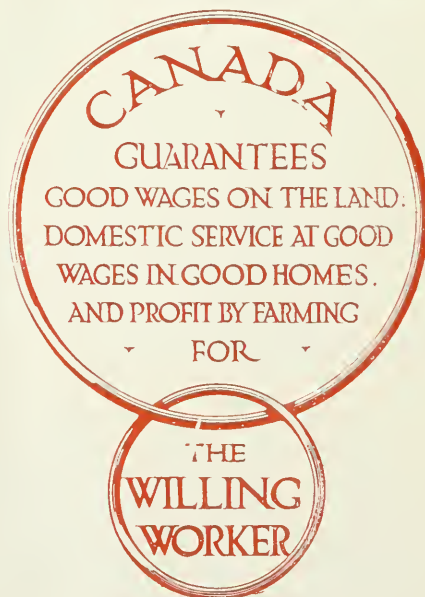
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Jacobinia chrysostephana.

By T. W. BRISCOE.

THIS is a charming and rather uncommon plan for the warm greenhouse, and is especially valuable because it flowers during the winter months. Many of the *Jacobinias* have been known under other generic names, such as *Libonia*, *Sericographis*, &c., and the subject of this note was sent out by Mr. W. Bull, of Chelsea, in 1873 as *Cyrtanthera chrysostephana*, and probably some older gardeners will recognise it better with that name. Soon after its introduction it was almost lost to cultivation, but during the last decade there has been a revival in favour of this type of plant, and now one occasionally sees a nice well-flowered batch. Like other *Acanthaceae* subjects, it is upright in habit, and the flowers are produced in a crown-like terminal cluster. These are bright orange in colour, and are of a curved tubular shape, while the foliage has a bright green tint, with a reddish tinge on the undersides.

J. chrysostephana is not a difficult subject to grow, and good flowering examples will be the result if the few details given below are carefully adhered to.

Short jointed cuttings are taken in the spring, and if placed in sandy soil will readily root, provided a little bottom heat or a propagating frame is at hand. When rooted they may be potted on as the necessity arises, and gradually inured to cooler surroundings. During the summer months a cold frame or cool greenhouse will suit them admirably, but a little ventilation must be given on all favourable occasions and the lights or ventilators closed sufficiently early for the sun to raise the temperature about 10° F. The most suitable size pot for them to flower in is from 5 inches to 7 inches in diameter, and the best effect is produced when the plant has three or four growths. It will be useless to try and make nice bushy plants, which so many strive after, and here is undoubtedly the stumbling block, and I wish to emphasise that no pinching or stopping should be done after the early stages of growth. Our object should be to secure examples with about three side shoots, and then, if well cultivated, we shall get good heads of flowers, which are sure to be highly appreciated in a warm conservatory. No more suitable plant could be found for enlivening such a structure about Christmas time, for they are usually at their best from then onward.

Justicia flavicoma

IN January, 1900, Mr. Hudson, of Gunnersbury, exhibited a small batch of this plant, and it was greatly admired by many who saw it. It belongs to the *Acanthaceae*, and the tubular yellow flowers are disposed in terminal thyrses or spikes. Like the *Jacobinia*, it is a most useful subject for decorative purposes during the winter and spring.

Cuttings are taken off about March or April, and when rooted they ought to be potted off singly. As soon as they are established in 3-inch pots the points of the plants must be pinched off to induce them to form side shoots. Pots 4 inches in diameter should be chosen for the final potting, and the compost consist of three parts fibrous loam and one part well decayed leaf-

mould. Where the loam is inferior in quality, a little manure may be added with advantage.

When they are well established a cold frame is very suitable, where the plants will be kept dwarf and sturdy, and in September they may be removed to the warm greenhouse or where the night temperature does not fall below 50° F. Here they will flower, and make a nice show from January to May, providing they are not thrown away after the first batch of blossoms fade.

Another fine *Justicia* is named *Carnea*, and should also be included where there is room. Red spider is occasionally troublesome, and to hold this in check slightly moist surroundings are advisable, which can be accomplished by damping the stages whenever they become very dry. Another good preventive is to spray the plants, particularly on the undersides of the foliage, through the summer months, but only during a hot, dry spell of weather.

Notes.

VERONICA GAUNTLETTII.—This shrubby *Veronica* has been a cheery sight this autumn up to the middle of November. The flowers are a bright carmine in spikes, 3 or 4 inches in length, and freely produced. In Co. Dublin it will only stand a mild winter if planted in the open, but on a warm wall it usually survives without protection.

ERYSIMUM LINIFOLIUM is a native of Spain, and seed was brought from there by Clarence Elliott. Sown in May, it germinated freely and flowered in October and November. The flowers are lilac, and rather resemble the Lady's Smock in shape and size, but are rather deeper in tone. The leaves are 3 inches or so long, narrow, with a sinuate margin. Its colour is welcome in the family related to the Wallflower, and the plant should be useful for the rockery.

FAGUS OBLIQUA. This Chilean beech has been one of the most pleasing of autumn tinted trees: the foliage changes to beautiful shades of yellow and red, and remains on the tree until the middle of November. Young trees have a graceful habit, sending up an erect stem with pendulous side branches. The oblique leaves are oval in shape with the margins prettily waved.

BORDEAUX MIXTURE.—Prof. T. B. P. Barker and Mr. C. T. Gillingham, at the meeting of the British Association, contributed an account of experiments designed to throw light on the mode of action of Bordeaux mixture as a fungicide. There has been, hitherto, some difficulty in explaining how the copper present in the mixture succeeds in penetrating the tissues of a fungus. One suggestion was that the carbonic acid present in the atmosphere acted as a solvent and vehicle of attack; it now appears that the cell walls of fungal hyphae exercise a direct solvent action on the copper, and are killed by absorbing the metal. From *The Journal of the Board of Agriculture*.

At the recent *Daily Mail* Ideal Home Exhibition at Olympia, a *Fifty Guinea Gold Cup* was offered for the best model of a garden design. The jurors have now made their decision, and have awarded the Cup to J. Cheal & Sons, Ltd.



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